INTERNATIONAL
MEDICAL MAGAZINE.

VOL. VIII.] FEBRUARY, 1899. [NO. 2

ORIGINAL PAPERS.

A CASE OF PAGET'S DISEASE OF THE BREAST OF THIRTEEN YEARS' DURATION, NOT SHOWING CARCINOMATOUS INVOLVEMENT OF THE MAMMARY GLAND.[1]

BY H. C. MASLAND, A.M., M.D.,

Philadelphia.

With a Pathologic Report

BY W. WAYNE BABCOCK, JR., M.D.,

Demonstrator of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia, and Pathologist to the Kensington Hospital for Women.

TRUE Paget's Disease of the Breast, or, more properly, Dermatitis Papilloma Malignans, is not of common occurrence. A typical case offering some interesting points for consideration is, therefore, worthy of record.

There is much diversity of opinion as regards the exact nature of this condition. Some believe it a chronic eczema or psoriasis of the breast; others, a true carcinoma of the skin; while practically all acknowledge a strong liability to secondary malignant involvement of the mammary gland.

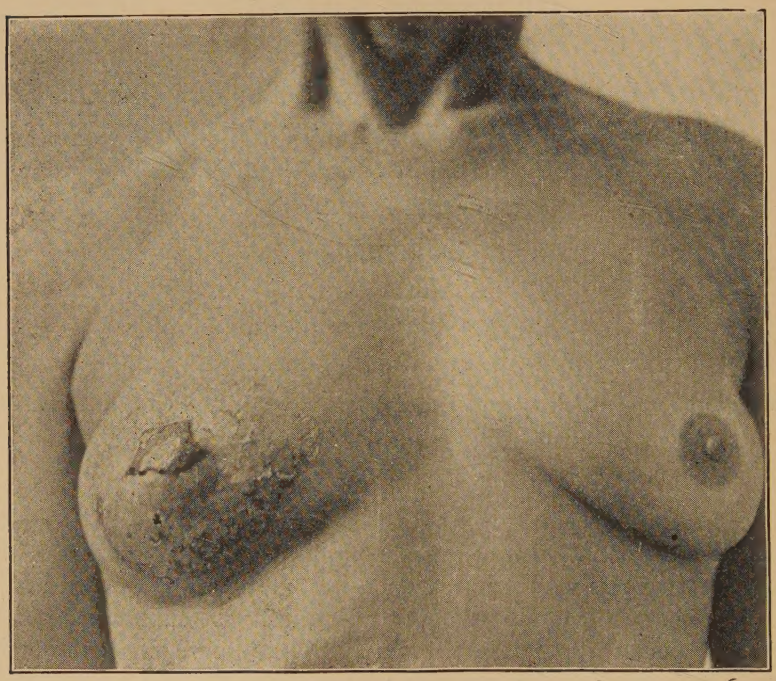
The following is a report of the clinical history of the case:

Mrs. X., white, native of Pennsylvania, fifty-five years of age. As regards her family history, her only sister is living and well; her three brothers died of tuberculosis. In these three cases there is a history of much exposure. Both her parents died in middle life of acute diseases, lasting, in each case, less than forty-eight hours. She had two maternal aunts who died of tuberculosis. Three maternal uncles died at about ninety years of age. Her mother's twin sister died in her eightieth year. Her maternal grandfather died quietly in bed after retiring in his usual health, aged 93. His wife,

[1] Read before the Philadelphia Pathological Society, Feb. 9, 1899.

who survived him several years, was probably a little older than he at her death. Her paternal grandfather died in his sixtieth year from an unknown cause, while his wife lived to be seventy-nine. There is knowledge of but one case of cancer among her numerous relatives, a maternal cousin who died of uterine carcinoma. The numerous cases of longevity in the first and second generations, coupled with the presence of tuberculosis in the second and third generations, are worthy of notice.

Menstruation appeared in her fourteenth year and ceased in her forty-eighth year. She was never pregnant, and states that she never suffered



from gynæcologic troubles. Other than from the present trouble, the patient has enjoyed good health.

About thirteen years prior to her coming under my care, she first noticed a small scab on the apex of the right nipple. Picking this off, there was a small, raw surface, from which there was a slight serous discharge. There was always a slight degree of itching, though early in its history not sufficient to give much annoyance. For about three years she treated the breast with cold cream and other mild home-remedies. The progress was slow during this time. For the next seven years she was under the care of a physician who prescribed the one ointment in all that time. This was, in all probability, a quite bland preparation. Toward the close of this time, the

disease started to spread more rapidly. She was then under the charge of a second physician for nearly one year. During this time the disease was becoming more extensive. She suffered greatly from burning, shooting pains over the surface of the involved area. Again there were periods of freedom from pain. These periods coincided with the times when the surface was most protected by the recuperative skin formation, to be referred to later. None but the blandest ointments could be endured.

In August, 1897, at my first examination, it was noted that the breasts were well developed. The right breast stood out the more prominently from the chest and was increased in size. The accompanying illustration, taken a short time before the operation in November, shows very well the general contour of the parts at the time of my first observation. On the right breast, extending beyond the region of the areola in all directions, was a moderately indurated area which bore a marked resemblance to chronic eczema. The outer zone showed a recuperative effort at skin formation. The new skin was pale and dry, exfoliating, and of little vitality. The central area exhibited an open, bright-red, ulcerative process. The whole breast gave an increased degree of tension, with a feeling of slight superficial induration over the implicated surface, but the most careful palpation failed to show any evidence of involvement of the deeper structures of the mammary gland.

Examining the illustration, you will notice that the nipple has disappeared. Its site is occupied by a slightly prominent, rounded, granular, ulcerated surface. When a girl, she suffered from a boil of the right nipple, and, subsequently, it was never as prominent as its mate. The obliteration of any distinctive nipple is, however, clearly attributable to the present process.

Just at the outer circumference of the breast, and toward the axilla, there were detected two small nodules, the largest about the size of a bean. These never gave discomfort; the larger one only was discovered by the patient about two years before, and had not increased in size since then. Repeated examinations before and at the time of operation disclosed no involvement of the axillary gland. A point of great interest in this case is the series of rapid evolutions which occurred from time to time in the appearance of the involved area. Three weeks prior to the taking of the appended photograph, the whole surface was an open, bright-red, granular ulcer, exuding a great quantity of a grayish-white sero-purulent discharge. Dr. L. A. Duhring saw the case in consultation at this time and considered it a typical case of Paget's Disease.

The illustration shows the degree of skin formation in these intervening three weeks. The new skin was moist and pale, presenting a macerated appearance. This condition of the skin was due to the fact that at this time I was applying olive oil and other ointments of a more liquid consistency than in the beginning of the treatment. The previous history of the case was of an improvement of this order of a greater or less degree, then a

quiescent stage of a variable length of time, and then a more or less rapid recession. The central area, in about the position of the normal areola, had, however, never healed over, as is shown by the dark central area of the illustration. Naturally, the pain was much greater with the surface exposed, and always of a burning, shooting, superficial nature.

The operation for excision of the breast was performed November 21, 1897, and was uneventful. The wound, save for a small space that could not be brought together, healed by primary adhesion. The ununited surface healed by granulation.

Fourteen months have now elapsed since the operation was performed. Mrs. X., who is of an energetic temperament, has done all of her own housework. She feels better, mentally and physically, than for many years. There are absolutely no signs of any return of the disease.

1614 W. Susquehanna Ave.

Pathologic Report by Dr. Babcock.

Amputated Right Breast, including a small portion of the subjacent muscle.—The specimen has been fixed, hardened and preserved in formaldehyd solution, which has impaired the color effects. A superficial portion of the specimen has been removed for microscopic study.

The epithelial surface of the specimen is convex and slightly uneven. Just above and external to the center of this surface is an area of a darker color 2.5 cm. in diameter. Its edges are slightly raised and thickened, and its surface faintly granular. It is irregular in shape, with rounded, convex borders. Scattered over the surface of the breast are other areas, measuring from 4 to 10 mm. in diameter, which conform, in the darker color, the irregular curved outline and the raised and thickened borders, with the larger area. These evidently represent seats of superficial ulceration. They seem to be separated by lighter, uenven areas of thickened and desquamating epidermis. The entire involved surface is irregularly rounded and measures 7.5 by 8 cm. It is surrounded by a narrow border of apparently healthy skin, the border being distinctly outlined and slightly elevated.

The nipple is absent, and it is difficult to determine its location from the surface appearance. On section, the skin is found to vary from 2 mm. in thickness at the periphery to 4 mm. in the region of the nipple. Subjacent to the integument is a large mass of adipose tissue, except near the center, where a fibrous cord, 13 mm. by 16 mm. in thickness, passes from the skin into the deeper structures. Below, this fibrous cord becomes irregularly expanded, until it measures 4 cm. in diameter 2 cm. below the surface. It gives off narrow prolongations of fibrous tissue into the surrounding fat. The tissue is firm and fibrous throughout, and to the naked eye gives no suggestion of glandular structure or degenerative change. There is little to indicate the usual lobulation of the mammary gland. The bulk of the speci-

men consists of adipose tissue, a fragment of muscle being attached to its under surface.

For microscopic study, vertical sections were taken from characteristic portions of the integument, including the deeper fatty and fibrous tissues. Transverse sections of the fibrous cord below the nipple area, and sections from outlying portions of fibrous tissue imbedded in the upper and outer quadrant of the breast, were also studied. The portions of tissue were dehydrated in alcohol, embedded in celloidin, sectioned, and stained with hematoxylin-eosin, thionin and Bismarck brown with Weigert's fibrin stain.

In describing the histology of the affected skin, it is convenient to first consider that of the outlying, apparently uninvolved surface; second, the structure of the areas between the points of ulceration; and, finally, that at the seats of ulceration.

The outlying integument conforms to the normal structure, the only alteration noticed being a tendency to a round-celled infiltration around some of the vessels of the corium. The involved integument between the areas of ulceration shows decided alterations. This is most marked in the corium, which is the seat of a marked cellular infiltration. This is noticeable in the perivascular spaces in all portions of the corium, but is more intense and diffuse in its outer layers. In places the infiltration is massed in rounded areas, so as to suggest the early stage of tubercle. There is a tendency for this infiltration to destroy the papillary character of the corium, and where the process is most intense the papillae are absent, the border of the corium being indicated by a slightly wavy line. The new cells include leucocytes and cells of the lymphoid and epithelioid type. The latter are oval or fusiform, have nuclei that are smaller and paler than epithelial cells, and tend to be arranged about the numerous papillary loops which ramify in upper layers of the corium. The cells in the papillary layer are separated and show swollen and poorly-staining nuclei. The cells adjacent to the capillary loops in the deeper portions of the cellular infiltrated corium also show evidence of edema, although the majority of cells in the papillary body and the deeper layers of the corium are well stained. The capillary loops are increased in number. Erythrocytes are present in the larger capillaries, but there is no evidence of hemorrhagic infiltration.

The rete mucosum is irregularly increased in thickness. It is at the places of thickening that the greatest alterations are noticed in the cells. The deeper-lying cells have swollen nuclei, and show large vacuoles, which appear in places to contain dark granules of nuclear detritus. Mitotic figures are also present. The inter-epithelial spaces contain a few leucocytes and mast-cells. In places the cells have been separated by fluid; vesicle formation is absent, however. In the thinner portions of the rete, the vacuolation of the cells does not exceed that found in normal skin. The stratum granulosum is well marked, being broadened by swelling of the cells. The stratum lucidum is visible only in parts of the section. The

stratum corneum is thickened and shows separation of its layers. It contained a few vacuoles enclosing a dark granular detritus.

In those portions of skin supposed to be the seat of ulceration, the upper layers of the corium presented the appearance of granulation tissue. There is no evidence of papillae. The new tissue is ramified by branching capillary loops distended with corpuscles. The superficial cells are edematous and degenerated, many failing to stain. The rete and stratum corneum are absent. In other places small areas resembling granulation tissue are found, covered with an attenuated rete, two or three cells in thickness, which has its epithelial elements obscured by inwandering cells. Superficial to this a stratum lucidum and stratum corneum are seen. These are evidently recently-healed ulcers.

Mast-cells are observed throughout the section. A few sweat glands and an occasional sebaceous gland are present, but do not appear to be involved in the inflammatory reaction.

Sections of the deeper structures present adipose and dense fibro-connective tissue. The fibro-connective tissue has a moderate number of blood vessels. In the more superficial portions, a moderate perivascular infiltration is present. A striking feature is the absence of glandular ducts or acini. This is noticed in all of the sections, both vertical and longitudinal. No other unusual features were found in either the fibrous or fatty tissues.

The pathologic diagnosis is a papillary dermatitis of the breast, with obliteration of the mammary ducts and acini.

Paget's disease of the nipple is of chief interest from its intimate relation to carcinomatous change in the mammary gland. In his original paper,[1] Paget refers to about 15 cases in all in which carcinoma appeared in the mammary gland within 2 years after the onset of the dermatitis. It was not found that the malignant disease of the gland followed skin inflammations of an eczematous or psoriatous character. This feature of malignant papillary dermatitis, as it has been termed by Thin,[2] has been confirmed by many observers, although cases are on record in which the disease has progressed much longer than 2 years without evidence of malignant change in the gland. Although Paget's disease is so frequently followed by carcinoma, its rarity is shown by its infrequence in association with carcinoma of the breast.

Of 400 cases of carcinoma found in the St. George's Hospital Reports,[3] only 5 (1.2%) were found to have this association. There are few established facts that have been added to our knowledge of this condition since Paget published his article. Thin[4] believed that the affection was

---

[1] St. Bartholomew's Hosp. Reports, 1874, p. 125.

[2] British Med. Jour., May 14-21, 1881, pp. 760-799. Trans. Path. Soc., London, 1881, p. 218.

[3] Shield quoted by Coley, 20th Cent. Pract., XVII., p. 426.

[4] Brit. Med. Jour., May 21, 1881.

primarily cancerous in the mammary ducts, and that the malignant process going on in the smaller glandular ducts produced poisonous substances, leading to the inflammation of the skin. The frequence of mammary carcinoma without dermatitis, and the occurrence of cases of typical malignant papillary dermatitis with no malignant change in the glands, would seem to negative this theory. Darier, J. Huchinson, Jr., Wickham[5] and others have propagated the theory that minute unicellular animal parasites produce the affection. Proof is yet wanting that psorosperms are the active cause, while the bodies described as parasites seem to be produced by vacuolation or other cellular degeneration, by presence of inwandering cells, or by the processes of cellular division. A more recent theory, suggested by Shield, describes the disease as a superficial carcinoma of the skin. It is, however, rather unusual for epithelioma to follow this affection, and our present conceptions of malignant tumors would render a carcinoma which did not tend to infiltrate adjacent tissue a marked anomaly. It would seem best for the present to simply consider the affection as a peculiar chronic inflammation of the skin of unknown origin which, by its peculiar persistent irritation, favors the development of carcinoma. The malignant change is first noticed as a distension of the mammary ducts resulting from a hyperplasia of the lining epithelium. The thinner wall of one of the finer ducts, some distance below the surface, finally gives way, and an epithelial invasion of the surrounding tissues occurs.

In cases like the one here reported, the obliteration of the mammary ducts may explain the long immunity from carcinoma. The disease usually affects the right breast in persons between 35 and 60 years of age. While usually affecting women, the male breast is not exempt, and a similar affection has been noticed upon the scrotum, face, and other parts. The symptoms are well illustrated in the clinical history of the present case. The diagnosis from eczema is often difficult. The sharply-outlined areas of superficial ulceration, showing a vivid red surface, exuding a viscid, yellowish discharge; the elevated circinate borders; the superficial parchment induration, and the resistance to anti-eczematous remedies, are characteristic of the disease. The absence of pustules and vesicles in any stage of the process is also significant.

The tendency for carcinoma to speedily supervene renders a prompt consideration of the operation for excision of the breast desirable. Superficial measures and operations seem to be almost invariably futile and may permit a fatal issue.

3626 North Broad Street.

---

[5] Maladie de la Peau. Dite Maladie de Paget, by Dr. Louis Wickham, Paris, 1890.

MODERN VIEWS ON ECZEMA AND THEIR INFLUENCE UPON ITS TREATMENT.

BY ARTHUR VAN HARLINGEN, M.D.

Emeritus Professor, Diseases of the Skin, Philadelphia Polyclinic, etc.

A good many years ago, only one form of eczema went by that name, the vesicular. Papular eczema was called "lichen," infantile eczema "porrigo," "red gum," etc. Under the influence of Hebra, a new definition was given to eczema, which was made to include a great many simple inflammatory affections of the skin, even those caused by external irritants which we, in this country, commonly class as dermatitis. Later, Unna introduced the class of seborrhœic eczema.

Dermatologists have of late taken a good deal of interest in the question of the possible bacteriologic origin of eczema. I have recently seen a monograph on the subject. (*L'Eczéma, Maladie parasitaire. Par le Dr. Leredde,* Paris, 1898) in which the author seems to take it for granted that eczema is an infectious disease. He seems to think that the different varieties of eczema met with are due to variations in the soil, with perhaps symbiosis or the simultaneous occurrence of two or more varieties of bacterial organism. There is no doubt that some affections we have been accustomed to call eczema are really forms of ring-worm; and as our knowledge of the bacteria of skin disease enlarges, we shall doubtless find other varieties of parasite causing various other forms of the disease until our ideas on the subject shall undergo a complete change, and the nomenclature of a few years ago shall become quite obsolete. Acute vesicular eczema is believed to be due to the toxines of a certain *morococcus.* Chronic or papular eczema is probably due to the same cause, and eczema seborrhœicum shows in its scales and crusts morococci, flask bacilli and minute bacilli of undetermined character.

I must say that in this view of the origin of eczema, its bacteriology, if we may call the imperfect knowledge we possess by such a name, is to me a very interesting one. Accustomed to look upon the disease from the practical and eclectic standpoint of a practitioner, I have never entirely taken the old diathetic view of the French school of thirty years ago, nor the purely local view of the Vienna school. The parasitic theory, therefore, commends itself to me as explanatory of many forms of the disease and as well worthy of the further study it is sure to attract in the immediate future.

Any one who has observed seborrhœic eczema must have been struck by its clinical resemblance to well-known parasitic diseases of the skin. The fact that it so often begins in the scalp, then manifests itself on the face, and, finally, appears on the sternum in the form of rings, is calculated to

attract the attention of the observer and to suggest the analogy just mentioned.

Again, the orbicular form of eczema, large, round, well-defined patches of disease scattered over the body and limbs and resembling ring-worm so closely as often to be mistaken for that disease, offers an excellent illustration, from the clinical point of view, of a parasitic disease. Other forms of eczema, as that occurring on two opposing surfaces, the eczema intertrigo of writers, offer the appearance of a disease of parasitic origin whose growth and extension are due to contiguity and favoring circumstances of heat and moisture.

The treatment of eczema, as followed by those who are most conversant with the management of diseases of the skin, offers considerable support to the parasitic theory of the disease.

The remedies used, aside from those employed simply for the purpose of allaying inflammation, are, largely, parasiticidal in character. Sulphur, tar, carbolic acid and creosote, mercurial preparations, potassa caustica, salicylic acid, the various preparations and compounds of iodine, ichthyol, resorcin, etc., occur to me as commonly reputed parasiticides, and also as valued remedies in the treatment of eczema. Not all of these act directly upon the parasites. In fact, it is questionable whether any, excepting the very strongest, have the power to destroy outright any parasite of the skin excepting, perhaps, the staphylococcus pyogenes. Some act as keratolytics, softening and disintegrating the horny layer of the epidermis; others as keratoplastics, building up again the external layers of the skin and finishing the work begun by these destructive agents, which break down and open the deeper tissues and either kill the parasite by the inflammatory reaction produced, or, perhaps, sweep it mechanically away.

Take, for example, the treatment of chronic eczema by potash soap, followed by some mild ointment. A vigorous rubbing with the sapo viridis in the case of a patch of chronic eczema, softens and breaks down the epidermis, throws open the vesicles to the air, and removes a considerable portion of their contents, besides causing a profuse exudation of lymph upon the surface. The parasite may be supposed to be removed by this, and now a simple ointment, applied to neutralize the excess of potassa and to give protection to the part, will hasten the cure.

I might give other instances, but the above will serve as an example. If we approach the treatment of eczema from this point of view, many things will appear clear to us which have been obscure, and I think, too, that our treatment will be more satisfactory. Certain it is that to the intelligent physician the empirical use of drugs must always be objectionable and to be abandoned whenever some rational plan can be followed. These newer views of the nature of eczema seem to me to promise much for the practitioner, and, perhaps, in the future will lead to less empiricism and fewer blind experiments with new drugs.

CHRONIC PLUMBISM FROM DRINKING-WATER.[1]

BY L. SMIRNOW, M.D.

New Britain, Conn.

(*Continued.*)

The Quantity of Lead That May Prove Injurious.

It is universally known and conceded that large amounts of lead in drinking-water will produce lead poisoning in the persons who happen to use it, and for this reason the instances of lead poisoning by large quantities of lead need but a transitory notice. Thus no one would doubt the truth of the statement that in 1857 numerous cases were discovered in Norwich, Conn., poisoned by lead contained in the drinking-water, which was found to be as much as four grains to the gallon. It remains for us, therefore, to consider the minimum amount of lead in drinking-water that undermines health, and whether a minimum can exist at all; to this part of the subject our attention is now confined. About thirty cases are here reported in which the quantity of lead in the drinking-water is given, and these quantities are quite at variance. Thus one case was poisoned by .6 gr., three cases by .3 gr., one by .42 gr., one by .25 gr. and another by .21 gr., thirteen persons by .7 gr., one by .125 gr. and another by .07 gr. of lead per gallon of water. The most interesting are the last two or three cases and the following four: one occurred as a consequence of using water containing one-fifty-seventh of a grain of lead per gallon, two from the use of water containing not more than one one-hundredth of a grain, and several cases at Tunbridge, Eng., as a consequence of drinking water containing even less than one one-hundredth of a grain per imperial gallon.

The literature is not wanting in some interesting speculations in relation to this subject, and they all lead, more or less, to one definite conclusion.

Thus Dr. Parks, a high English authority, thinks that any quantity of lead exceeding one-twentieth of a grain per gallon must be considered as unsafe. Professor Graham, Mr. Taylor and others are of the same opinion.[2] Dr. Smith, of Sydney, in his papers before the British Association, has given his opinion, based upon observations in Manchester, that one-fortieth of a grain of lead per gallon is sufficient to cause lead poisoning in some people, while one-tenth of a grain may be required for others.[3] Dr. Sydney Ringer thinks that one-fortieth or one-fiftieth of a grain per gallon

[1] A portion of a thesis entitled: "The Quantity of Lead in Drinking Water that May Prove Injurious to Man, and Improvements on the Separation of Lead from Urine by Electrolysis."

[2] Report of State Board of Health of Massachusetts, 1871.

[3] *Dingler's Polytechnisches Journal*, 1861, p. 220.

is sufficient to produce some or all the symptoms of lead poisoning.[4] Professors Hoffman, Graham and Miller[5] adopt the opinion of Dr. Smith, of Aberdeen, that less than one-twentieth of a grain per gallon produces no deleterious effects, and so minute a quantity as one fifty-seventh of a grain per imperial gallon can have no possible influence on the health. Dr. Horatio Adams, of Waltham, Mass., however, contested these opinions in his report to the American Medical Association,[6] and has produced abundant material to prove the contrary. In many cases of unmistakable lead diseases, he, and other members of the same committee, have examined the drinking-water used, and, although, as a rule, the amount of lead would not fall below one-twentieth grain to the gallon, yet the cases have not been rare, he says, where disease has been produced by water containing one one-hundredth of a grain of lead per gallon. One-hundredth of a grain of lead is easily detected by a simple stream of sulphuretted hydrogen. Yet water has sometimes caused disease, under the eye of a part of the above-named committees, where this test showed no trace of lead; but lead was abundantly evident after concentration of the water, and the sulphuret thus obtained converted into salts of lead and again examined, to confirm the hydrosulphurous test. In view of this, therefore, and instancing the Tunbridge[7] well, the water of which contained so small a quantity of lead as to escape detection at the hands of the best chemists of that day, Dr. Adams concludes that the amount of lead capable of causing disease is even less than one one-hundredth of a grain per gallon of water, or less than one to seven million.

Dr. Horsford, who held rather opposite views, had manifested no little interest in the matter. He examined[8] the spring water of Dedham, Mass., and found that 100 cc., at rest twelve hours in a leaden pipe several years in use, gave 0.00003 gr. = 0.0013 gr. in a gallon.[9] "Several years since," he says, "Dr. Webster examined some of this water from the pipes of a gentleman who was made ill, and detected lead by treatment with sulphide of ammonia. * * * But, so far as I have been informed, only one well-established case of lead disease is known to have occurred from the use of this water." The case to which Dr. Horsford refers is No. 76 of this collection. That he was misinformed in regard to the occurrence of more cases of lead poisoning from this spring water, is shown by the fact that another one occurred in the same house (*vide* Case 77), also as the result of using the same water. But Dr. Horsford looks for "well established" cases of

---

[4] Materia Medica and Therapeutics, 7th edition, p. 225.

[5] Vide Report on the supply of water to London, in the *Quarterly Journal of Chemistry*, No. 16.

[6] *Trans. of the Amer. Med. Assoc.*, 1852, 167.

[7] Vide Case 31.

[8] *Proceedings of the Amer. Acad. of the Arts and Sciences*, 1848, p. 76.

[9] More correctly 0.0011355 grs. to the gallon.

lead poisoning, and, apparently, leaves those of minor nervous and digestive disturbances wholly unnoticed. As a matter of fact, numerous other cases of lead poisoning from the use of the spring water of Dedham have occurred, as is evidenced by the reports of Dr. Stimson, the resident physician, and Dr. Adams. In connection with the one above quoted (Case 76), and in reference to the same spring water which Dr. Horsford tested for the lead and found 0.0013 gr. per gallon, Dr. Stimson says:[10] "Many of the inhabitants continued to drink the water, although warned that it contained a deadly poison, until they began to feel the evil effects of it, when it was abandoned. Most of the cases recovered after the use of the water was discontinued." In regard to the same spring water, again, Dr. Adams says:[11] "So numerous were these cases of lead poisoning from the drinking-water contaminated with lead, as to be almost considered in the light of an epidemic. Most of the inhabitants abandoned the use of the water, and the great frequency of the disease disappeared. But some of them were sceptical and continued to use the aqueduct water, and were unwilling to believe the poisonous effects of it, until forced to do so by their personal experience in the disease caused by it."

In view of the fact that cases of lead poisoning have occurred from drinking-water containing one one-hundredth of a grain of lead per gallon, and others from less than that quantity, it may be inferred that very minute quantities of lead, if taken for some time into the system, will produce disease. A question now arises: Can there be a limit to the amount of lead which, habitually taken with the food or drink for any length of time, will produce disease? With evidence so impressive, of such minute quantities of lead in the drinking-water which proved deleterious, and that, too, in many persons, it would be a mere prejudice to lay it to personal susceptibility. To be sure, more lead may be required to poison one person than another, but that these minute quantities, which caused disease in some would not produce it in others less susceptible to it, even if its ingestion be continued for an indefinite length of time, cannot be proven. That lead, once gotten into the system, is very slowly eliminated, is a fact universally recognized. It may linger in the body for weeks, or even months, before its elimination is complete, provided there is no further introduction of it into the system. If, however, its introduction in whatever manner, and in ever so small a quantity, still continues, that introduced daily exceeding the diurnal elimination, the surplus will accumulate in the body, and may be inappreciable, as far as its action on the organism is concerned, so long as the quantity remains small. But slowly and surely it continues to collect in the system, and to lodge in its tissues, until it reaches the amount sufficient to produce disorder, and then manifests itself in the usual way.

This quantity so accumulated need not be very large, for in some cases

[10] *Trans. of the Amer. Med. Assoc.*, 1852, p. 193.

[11] *Ibid.*, 196.

of lead poisoning, on analyzing the tissues of the body, only a very small amount may be found to be the cause. No reliable data are to be had on this subject, however, so that all reasoning thereon must be rather of a speculative character. Hence, given an individual who drinks water containing one-fiftieth of a grain of lead per gallon, and assuming that he uses four gallons of water per week, in one year (52 weeks) he will have consumed 4.16 grs. of lead. It is probable that most of it would be absorbed, it being so dilute that the H_2S in the bowels would not precipitate it. One-fourth of its amount, however, would be eliminated through the kidneys. So, for five years, after deducting the amount eliminated, about 15.6 grs. of lead would remain lodged in the tissues, a quantity which is borne out by all available facts to be sufficient to produce disease.

It would appear, therefore, that a person would be poisoned by water containing one-fiftieth of a grain of lead to a gallon, all conditions being the same, at about the end of the fifth year. The less susceptible the individual, the more has to accumulate in his system in order to affect him, and, therefore, a longer time elapses. Extending these calculations further: with one one-hundredth of a grain of lead per gallon, it would take about ten years before enough will accumulate to prove poisonous; and with one two-hundredth it would take about twenty years. It will be urged that these quantities are too small to produce any effects. But how much lead can be expected to enter the organism of an individual who has slept once or twice in a newly-painted room? Yet a case is on record that has presented pronounced symptoms of lead poisoning, the cause not being traceable to anything else than to sleeping in said room. How much lead can be expected to enter the system of individuals who have worked for eight, twelve, fifteen, sixteen, eighteen, nineteen, twenty, etc., days in preparations of lead? Numerous such cases are reported by the highest authority on the subject, Tanquerel des Planches, to have occurred.[12] How much lead can be expected to enter the system of individuals from the use of cosmetics and hair dyes? from baking bread with painted wood?[13] from the use of imperfectly burnt pottery?[14] from habitually biting silk thread which manufacturers often load with lead to give weight to it?[15] Cases with positive symptoms of lead poisoning have come for treatment to the New Haven Dispensary, having been employed by the Candee rubber manufactory but a week or two, the cause being traceable only to the metal with which they were in contact during the short period of their work. Many other such instances could be adduced, but I think it quite superfluous.

From what has been said, it may be made conclusive, that lead in ever so

---

[12] Lead Diseases, Trans. by S. L. Dana.

[13] Le Progres Med., 1877, p. 49.

[14] Schmidt's Jahrbücher. Bd. CXLIV., p. 279. *Phila. Med. Times*, Vol. IV., pp. 241, 483.

[15] Wood's Therapeutics, 1894, p. 487.

small a quantity, if continually introduced into the system, the daily income exceeding the daily elimination, and the excess accumulating in the system (the latter two conditions being indispensable), will sooner or later cause plumbism in the individual thus involved. Not speaking more at length of the very minute quantities, which may prove tolerable for some persons, or may take a very long time before it can produce any effects, I wish to emphasize more particularly upon one-fiftieth of a grain per gallon as a quantity possible to produce disease. It will accumulate, as above calculated, in about five years in sufficient strength to prove deleterious to a person of ordinary susceptibility. For others it may take a few months or a year or so longer to produce the same effects, but it will, sooner or later, affect any person using such water.

Cases of Lead Poisoning from Drinking-Water.

The following are well-authenticated cases of chronic lead poisoning, the cause being in some directly traced to drinking-water by chemical analysis, some of which give the quantity of lead so found, others also the quantity of lead eliminated through the urine. All doubtful cases, which are quite numerous, I have rejected, as also many cases in which no analysis of the water or urine was made.

Cases in which the quantity of lead is given:

Case 1.—This case is reported by Dr. Angus Smith, and quoted by Dr. W. S. Porter.[16] It is a case of lead palsy; the quantity of lead was found to be only one-hundredth of a grain per gallon.

Case 2.—Dr. Adams, of Waltham, Mass., reports a case of poisoning, from drinking-water, in which less than one-hundredth of a grain of lead was found per gallon of the water. This was a case of paralysis of the muscles of the forearm, hand and fingers of one limb.[17]

Case 3.—Dr. Graham reports a case of lead poisoning from one fifty-seventh of a grain of lead per gallon.[18]

Of the many cases, Dr. W. R. Thomas[19] reports the following four:

Case 4.—Patient A., aged 30, a traveller in Sheffield, a sober and steady man, complained of colicky pains and griping, principally about the umbilicus and in the right iliac region; of always feeling tired; of aches in the back and limbs. The bowels were costive, the tongue foul, the gums were red, but there was no blue line, except near the second molar tooth. The water he used was found to contain 0.25 grain and the urine 0.19 grain of lead per imperial gallon.

Case 5.—B. The indications of the action of lead in this case were: Blue line on gums, furred tongue, dyspeptic symptoms, pain in abdomen and back, frequent micturition at night, albumen in the urine, general debility, slight confusion of intellect, paralysis of extensors of both hands. The drinking-

---

[16] *Med. Press and Circular*, 1886, p. 142.

[17] *Trans. of the Amer. Med. Assoc.*, Vol. V., p. 222; Report of State Board of Health of Massachusetts, 1871.

[18] *Med. Press and Circular*, 1886, p. 142.

[19] *Ibid.*, p. 72

water was found to contain .25 grain of lead and the urine contained 0.07 grain of lead per imperial gallon before taking any remedy; after taking gr. vi of potassium iodide, three times a day for two weeks, he passed .10 grain of lead per imperial gallon.

CASE 6.—C., aged 26. The symptoms were: Pale lips, red line on gums, furred tongue, dyspepsia, constipation, colicky pains in bowels, which often came on in paroxysms, pain in back and limbs, general debility, loss of flesh, mental dulness, palpitations, shallowness of breathing, blue line. The water was found to contain 0.42 grain of lead per imperial gallon; the urine .28 grain per imperial gallon.

CASE 7.—D., female, aged 42. Symptoms: Headache, backache, pain in the bowels, constipation, pale lips, coated tongue, anorexia, dyspepsia, general weakness, listlessness, mental confusion, impairment of vision, palpitation, cachectic appearance, red line (not blue) on the gums. The drinking-water was found to have contained lead.

CASES 8-11.—Three workingmen,[20] working in the same shop, had decided symptoms of lead poisoning—colic, constipation, blue line on the gums, etc.; all three drank water from the same tap. The water was found to contain 0.3 grain of lead per gallon.

CASE 12.—A workingman.[21] There was a well-marked history of colicky attacks, constipation and ill-health for four months previously. He had a well-marked blue line on the gums, weakness of his right wrist, etc.; the drinking-water he used was found to contain 0.08 grain of lead per imperial gallon.

CASE 13.—A scissors smith.[22] History of ill health and severe attacks of colic. He had the blue line, cachexia and albuminuria. The water he used was found to contain 0.07 grain of lead per gallon.

CASE 14.—A domestic servant.[23] Never used lead for any purpose. History of palpitation, shortness of breath, and increasing nervousness. She was anæmic, had a sweet taste in the mouth and a blue line on the gums. The water she used contained 0.28 grain of lead per gallon.

CASE 15.—Dr. Abbott reports a case[24] in which the toxicologic effects of lead were developed by water containing one-eighth of a grain of lead per gallon.

CASE 16.—Mechanic,[25] 42, at Keighby, died with symptoms indicative of chronic lead poisoning, induced by drinking the town water, which was found to contain three-fifths of a grain of lead per gallon. For six weeks he had been out of health, and a week before his death he suffered from colic, vomiting and constipation. There was a blue line on his gums. Occasionally he had epileptiform attacks. After death the kidneys were found granular and the heart somewhat enlarged.

CASES 17-29, inclusive.—Louis Philippe's household in Claremont, exiles from Paris, were poisoned after the lapse of seven months, by drinking water containing 0.07 of a grain of lead per gallon.[26] Or, as Dr. S. L. Dana reports,[27]

---

[20] Dr. W. S. Porter, *Med. Press and Circular*, 1886, p. 140.

[21] *Med. Press and Circular*, 1886, p. 141.

[22] *Ibid.*, p. 142.

[23] *Ibid.*, p. 143.

[24] *Bost. Med. and Surgical Journal*, Vol. XCIV., p. 42.

[25] Blyth, On Poisons, 1885, Vol. II., p. 543.

[26] Report of State Board of Health of Mass., 1871.

[27] *Trans. of the Amer. Med. Assoc.*, 1852, p. 235.

0.62 gr. per gallon. Out of 38 cases, 13 were poisoned, most of whom presented a blue line on the gums. All suffered from colic, nausea, vomiting, constipation, jaundice and nervous disturbances simulating hysteria. The water was drawn through a lead pipe from an iron cistern.[28]

Wholesale Poisoning by Lead.

Case 30.—During the year of 1857 several persons died at Norwich, Conn., lead having been suspected as the cause, introduced into the system with water supplied from "Kenney's aqueduct." The Norwich *Courier* says: "The worst fears are confirmed. A quantity of this water was sent to Dr. James R. Chilton, chemist, of New York, for analysis. He stated that it contained lead in solution, in the proportion, as near as he could estimate, of four grains of lead per gallon of water." The *Courier* further says: "The aqueduct which has thus been doing its work of death has been in operation for many years — probably not less than twenty-five — and how many, young and old, have gone within that period to premature graves, no one can tell. But busy memory in the minds of those most familiar with the history of families residing on Church and Washington streets recalls cases after cases of death, the symptoms of which point to the poisoned water of this aqueduct as the cause."

Case 31.—In 1814 a pipe of lead was laid to conduct water for a quarter of a mile to Tunbridge, Eng., for the use of those who chose to take it. About a year after the water was used, a great many cases of colic, and one at least of paralysis, evidently lead disease, appeared. Iron was then substituted for the lead pipe, and the maladies disappeared. The quantity of lead was almost inappreciable, and escaped the acute analytical test of some of the best chemists of that day. Professor Brande, of the Royal Institution, however, has found lead in the water. This water was analyzed by the celebrated chemist, Dr. Thomas Thompson, who found it remarkably pure, containing $\frac{1}{38000}$ of saline matter, three-fourths of which were chlorid of sodium.[29]

Case 32.—Van Swieten has seen a whole family attacked with lead colic, from having used, in the preparation of their food, water which has been in a lead vessel.[30]

Case 33.—Tronchin has observed [31] that lead colic, so common in his time among the inhabitants of Amsterdam, was caused by their using rain water, which has remained in cisterns lined with lead, or upon the flat roofs of the houses, which were also covered with the same metal.

Case 34.—Van Trootswyk has observed that the waters of Haarlem, collected in the same way as those of Amsterdam, occasioned the same disorders.[32]

Case 35.—Wall [33] has seen all the residents on a farm attacked with colica pinctonum, from drinking water from a pump, the cistern of which, and the pipe, were lined with lead. This metal, in the course of three years, was known to have been in a great part destroyed and mixed with the water. By the advice of Wall, the farmers used other water not in contact with lead; from that time on they were not attacked with colic.

Cases 36-55, inclusive.—Twenty girls[34] have had lead colic, some emacia-

[28] For more particulars of these cases, vide *Trans. Amer. Med. Assoc.*, Vol. V.

[29] Tanquerel des Planches' Lead Diseases, trans. by S. L. Dana.

[30] *Ibid.*

[31] *Ibid.*

[32] Tanquerel des Planches' Lead Diseases, trans. by S. L. Dana.

[33] *Ibid.*

[34] London *Lancet*, 1851, Vol. I.

tion and other ailments, all of which have been living in the same place, *i. e.*, in a school building. All conditions were favorable to good health, such as hygiene, diet, drink, etc., and notwithstanding all proper precautions and care, change of diet, etc., their conditions have not improved. When, finally, Dr. Robertson directed his attention to a leaden cistern which contained water for the supply of the girls' washing place. The children were in the habit of drinking this water when they had no fresh well-water at hand. On examining the filtered water, a very small quantity of lead was found in it, so small that, at the first analysis made, it escaped detection; however, its presence was ascertained after testing several samples. The use of the water was dispensed with, and the children all returned to good health within three weeks, and no further attacks occurred.

Case 56.—In a garrison of U. S. soldiers at Fort Delaware, numerous violent cases of lead colic occurred, owing to the use of water collected in cisterns from a large painted roof.[35]

Case 57.—The crew [36] of an East Indian packet having been put on short allowance of water, in consequence of being delayed by contrary winds, the men got their shares each in a bottle; but the officers united their shares and kept it all in a lead cistern. In three weeks all the officers began to suffer from stomach and bowel complaints, and had lead colic for six weeks; while the men continued to enjoy good health. The surgeon at length detected lead in the water, without concentrating it, by adding to it the sulphuret of potash.

Cases 116, 117.—Two families in New Bedford, Mass., were affected with lead colic, traced to the use of drinking-water contaminated with lead.[37]

Case 118.—In New Orleans the inhabitants have suffered greatly from lead affections, due mainly to lead in the drinking-water. See Reports,[38] by Dr. Fenner, of 1849 and 1850, on Lead Poisoning and Epidemic Colic.

In Cincinnati, according to Dr. R. Jay Kuttredge (vide Southern Medical Reports, Vol. I.), lead diseases are not infrequently met with. And notable quantities of lead were found in the water drawn through lead pipes.[39]

(To be continued.)

Vaccination in England and Scotland. In England, the great part of the work of vaccination — about one-half in London and about two-thirds in the provinces — is done by the public vaccinator, a medical man who attends weekly at a station, where he operates on all who come to him. The work of public vaccinators is supervised by the staff of medical inspectors attached to the Local Government Board. A great part of the vaccinal duty of these inspectors consists in seeing that the work done by the public vaccinators reaches a high standard of efficiency.—(*Med. Press and Circular.*)

---

35 Wood's Practice of Medicine, 1852, Vol. I., p. 626.

36 Christison, On Poisons, 1845, p. 413.

37 *Trans. of the Amer. Med. Assoc.*, Vol. V.

38 Southern Medical Journals.

39 Dr. S. L. Dana, *Bost. Med. and Surg. Jour.*, Nov. 9, 1842.

TALKS TO GENERAL PRACTITIONERS.

DIAGNOSIS OF GONORRHEA IN WOMEN.

BY J. D. THOMAS, M.D.
Professor of Genito-Urinary Diseases, Western Pennsylvania Medical College (Medical Department, Western University), Pittsburg; Genito-Urinary Surgeon to South Side Hospital, etc.

WOMEN frequently have a gonorrheal discharge from the vagina, and, not knowing the nature of the discharge, remain indifferent. In this respect the contrast with the male is marked, for with the latter a discharge from the urethra is always a matter of anxiety. An acute gonorrhea in the female, if confined to the os and cervix uteri or vagina, may pass unnoticed. This has been observed by me in some cases when the disease had been conveyed by the husband. However, the urethra is generally involved, and it is for this phase of the disease that the physician is consulted. If no examination is made by the physician, the burning and desire for frequent urination soon passes off, if an alkali has been prescribed, and neither physician nor patient knows the character of the trouble, and hence no precautions are observed. It is a mistake to expect to find swollen labiæ and difficult locomotion, unless Bartholinitis exists, followed by profuse discharge in the cases of gonorrhea in women as they ordinarily present themselves. Indeed, cases of simple leucorrhea may present a more profuse discharge than is found in the gonorrheal ones. The profuse discharge and swollen labiæ are only found in virgins or children who have vulvitis in addition to the other manifestations of the disease. In these latter cases the hair covering the mons veneris, in those old enough, will be found matted.

A recent contributor says: "The diagnosis of acute gonorrhea in the female is comparatively easy, even without the microscope. What with a history of impure coitus, free purulent discharge from the vulva, vagina and urethra, intertrigo, burning on micturition, and vesical tenesmus, the diagnosis is not far to seek. * * * Erosion may be present upon the skin, upon the labia majora, or in the inguinal and gluteal folds. The labia minora, the clitoris and its prepuce, and the hymen, if present, are red and swollen. The meatus urinarius is found to be ectropic and congested. * * * The mouths of the ducts of the Bartholinian vulvovaginal glands are deeper in color, gaping and tender." It is true, if the majority of cases presented the above *typical and full* symptoms, the diagnosis would be easy; but they do not. If the gonococcus is found, the diagnosis is positive. But it is not to be supposed that the vast majority of general practitioners are prepared to examine for the gonococcus, for it requires practice before one is able to recognize the germ, and in cases that are not recent, where the urethritis is recovered from, and where douching of the vagina has been practised, we

must form our diagnosis from the clinical history, from direct observation and experience, as at this time the gonococcus is difficult to detect.

When children are brought with vulvitis and urethritis, it is not proper to infer that they have been the victims of an assault. The infection in these cases is often the result of sitting upon a vessel previously used by one having gonorrhea. I recall the case of a mother who was suffering, unknowingly, from a gonorrhea derived from the husband. She, with her two little daughters, used a slop-jar in common, and all were infected.

When mothers bring their female children to the dispensary for treatment for genital discharge, it can generally be ascertained that they themselves have or have had painful urination and give a history of vaginal discharge.

If women, especially married ones, present themselves, and gonorrhea is suspected from the subjective symptoms, it is well to carry the investigation a little further, but in a way not to arouse the suspicion of the patient, for it is not the function of the physician to create domestic troubles. In an indifferent manner the patient might be asked whether her discharge in any way produces discomfort or a discharge in the husband. If the husband has a discharge, it will help clear up the diagnosis and at the same time warn us to be guarded in our remarks. On objective, or direct, examination—unless the patient has thoroughly douched the genitals immediately before presenting herself, and if such should be the case, she must be enjoined, when she again presents herself, to abstain from the douche that day — the first thing to observe will be the amount and character of the discharge, then the condition of the ducts and glands of Bartholin, then the urethra, and, finally, the os and cervix uteri. If the case is one of gonorrhea, as before noted, the amount of discharge from the vagina may be but moderate, the ducts leading to the glands of Bartholin, on pressure, may discharge a purulent or muco-purulent secretion, but if the gland is acutely inflamed, the patient will be obliged to remain upon her back, for under such condition locomotion is impossible, owing to the large pear-shaped and painful swelling. On inspecting the meatus, or by pressure, a drop of pus is observed. Then, with a speculum introduced into the vagina, and this can usually be accomplished, unless in the case of children or those unused to copulation, a discharge will be noticed at the os, with congestion or erosion about the same; the cervix will be covered with a tenacious secretion, and, as the speculum is being opened, a teaspoonful or more of thick pus will well up into the posterior blade of the speculum from the cul-de-sac behind the cervix, where it accumulates. The pus from the urethra does not always present itself immediately, neither is the meatus always swollen and pouting, but if the urethra is "milked" from above, the pus will present at the meatus. If there is no history of traumatism, the urethritis and Bartholinitis are pretty sure to be of gonorrheal origin.

To show how necessary it is to be thorough in our examination, I will narrate the following instance: A married man consulted me, and, on

examination, he proved to have a typical gonorrhea. He denied intercourse with others than his wife. When he asked for a diagnosis, I told him it was *urethritis;* and if he discovered that his wife had leucorrhea, that she, as well as himself, must recover before any further intercourse should take place. On the following day, a comely female called at my office and inquired as to the character of her husband's trouble. Having satisfied myself that the husband was free from wrong-doing, I told her promptly that it was gonorrhea. She then asked me how he contracted it. I stated that I did not know, as he had not had intercourse with any other woman. She became indignant, and insisted that I should examine her there and then, as there was nothing wrong with her. On examination, I observed that she had thoroughly cleansed herself, the vulva and vagina were dry, there was no pus presenting at the meatus, but, by stroking the urethra, a large drop of pus was brought into view (she had evidently not urinated lately). This I caught on a piece of cotton and showed it to her, with the statement that she was not free from disease. I did not have an opportunity to examine the os uteri, for she jumped from the chair and made a hasty departure.

I have said nothing about gonorrhea of the endometrium, tubes, etc., for I presume that these complications will be included in the gynecological "Talks." I wish at this time, however, to draw attention to the fact that occasionally, when the endometrium is involved, there may exist an acute metritis.

THE APPLICATION OF ASEPSIS AND ANTISEPSIS TO GENERAL PRACTICE.

BY CHARLES LESTER LEONARD, A.M., M.D.,

Philadelphia, Pa.

THE recent controversy regarding the merits of asepsis and antisepsis has established the fact that both have their place and sphere of usefulness.

Asepsis, or the prevention of infection, without the employment of antiseptic agents or germicides, is the ideal. By it we endeavor to aid nature in producing a perfect healing. It should always be employed in operations where the tissues are free from infection. The employment of the aseptic technic in place of the antiseptic saves the wound not only from infection, but also from the irritation and even slight superficial sloughing that has been shown to follow the use of the chemical agents generally employed as antiseptics.

The combination of antisepsis with asepsis is, however, necessary, since it is impossible to sterilize the field of operation or the hands of the surgeon and of his assistants in any other manner than by the employment of chemical antiseptics.

In cases where suppuration is absent, you should employ asepsis, only employing such antiseptics as are necessary in sterilizing the field of operation. They should be kept out of the wound itself, as those that have any considerable power injure the vitality and reconstructive forces of the tissues and hinder rapid healing. It is an essential of aseptic healing that wounds should be as dry as possible. Antiseptics add moisture, and, in addition, their necrotic action on tissue, though it is only superficial, supplies food for any bacteria that may remain behind, while the necessity of its resorption delays union.

Where marked infection is present, you will find it necessary to employ antiseptics in destroying the infecting bacteria that are already present, while in some instances the abscess cavity or depths of the wound will have to be packed with gauze wrung out of a weak antiseptic solution. Wherever it is necessary to use antiseptic solutions for irrigating, they must not be too strong, or their action upon the tissues will be more harmful than beneficial. In all cases they should be thoroughly washed away with sterile water or a sterilized normal salt solution, six-tenths of one per cent.

Infection we know to be concurrent with the presence of certain kinds of bacteria that are present even after ordinary means of cleansing have been employed. Asepsis means surgical cleanliness or the freedom from bacteria capable of infecting. Antisepsis is the antagonism of sepsis, or a method of destroying bacteria that are present, of preventing further infection or the development and growth of those that may chance to remain.

In general terms, your object should always be to assist nature as much as possible; preventing infection without retarding her reparative processes, where you can, by employing asepsis, but giving her vigorous aid where it is needed, making a free outlet for pus and employing antiseptic agents that will antagonize septic processes where they are indicated.

Whether asepsis or antisepsis is employed, it is essential that the wound or abscess cavity be made as dry as possible. The presence of moisture or cavities in which serum and blood-clots can collect are all favorable to the production of septic infection. The conditions necessary for the development of bacteria are moisture, food and warmth. Two of these requirements are thus furnished, while the warmth of the body is the third.

The methods commonly employed to obtain asepsis are: boiling, steam, steam under pressure, and dry heat.

Boiling is the most certain and rapid method of sterilization, as all the more common forms of bacteria can be destroyed in twenty minutes, or even less time. Its usefulness is, however, limited, as it can only be employed where the object to be rendered aseptic is capable of withstanding the action of boiling water. Its chief application is, therefore, found in the sterilization of instruments. Modern instruments are so made that they can be boiled without injury. The efficiency of this method is increased by adding a heaping teaspoonful of carbonate of soda to each quart of water.

It is impossible to sterilize organic tissues by this method in many

instances, while, where it is applicable, the necessary moisture remaining in cloths, dressings, etc., reduces their absorptive power. Steam sterilization has, therefore, been substituted, and has been found to be as efficient. It does not produce the absolute sterilization of the bacteriological laboratory, but you will find it sufficient for all ordinary requirements, as all bacteria are destroyed that do not form spores. Some form of apparatus is required that partially confines the steam, and maintains a temperature of 212° F. for twenty minutes in the chamber containing the material to be sterilized. The Arnold steam sterilizer is the one most commonly employed for this purpose in this country. It, however, has the disadvantage of being rather bulky for transportation. One that I had made for my own use, and that

I, as well as others, have employed for some years with satisfaction, is shown in the accompanying illustration. The lower portion is used for boiling the instruments, while the upper portion has a wire gauze bottom and serves as a steam chamber in which the towels, aprons and gauze to be used in the operation may be sterilized. The upper portion inverts and telescopes within the lower, and thus forms a compact and convenient case for carrying the instruments. Instruments can, however, be boiled in any convenient dish that has previously been cleansed by boiling with washing soda.

Steam sterilization under pressure is the most efficient method now known that is compatible with the preservation of materials to be sterilized. The apparatus essential to its employment is, however, too costly to make it applicable in the field now under consideration.

Dry heat is more of a laboratory method, and is only of practical utility in rendering aseptic the glassware used in bacteriological laboratories.

Antisepsis is the antagonism of sepsis and the method of destroying bacteria that produce it. Antiseptics or germicides are chemical agents that are employed to destroy bacteria. Some of those that are most commonly

employed are: Bichlorid of mercury, carbolic acid, boracic acid, permanganate of potassium, and a newer and apparently most valuable one, the soluble silver salts.

The convenient tablet form in which the bichlorid of mercury is prepared has made the employment of this antiseptic very convenient. Although there has been some doubt expressed regarding its efficiency, clinical experience has placed the consensus of opinion strongly in its favor. The action of the bichlorid by itself is impaired by its effect upon albumen and the combination of acetic acid with it, or some other similar agents, as found in most prepared tablets, is of distinct advantage, while the addition of common salt prevents its precipitation. It is employed in solutions varying in strength from 1-1000 to 1-10,000.

Carbolic acid, while a convenient antiseptic and one that has considerable activity, is to be employed with care, as many instances of its untoward action have been reported. It is capable of producing poisoning by absorption, and if it is employed in wet dressings on the extremities there is always danger of producing gangrene. Many cases of this nature have been reported. You should be very careful if you ever employ it. The solutions in use vary in strength from 1-40 to 1-100.

Boracic acid is considered by many nearly useless as an antiseptic, and yet clinical evidence shows it to have a distinct value. It is non-irritating and non-poisonous. These qualities make it especially useful in operations on the face and mouth. A saturated solution is used. In the form of a dry powder, the fine crystaline boracic acid makes an admirable dusting powder and forms an artificial, aseptic, dry scab over the wound. It has been suggested that it acts by preventing the development of bacteria. Whatever its action, you will find it a valuable agent, especially where asepsis has been employed during the operation and you desire to keep the wound aseptic and free from irritation. The relative value of various dusting powders as antiseptic agents, we will consider at another time.

Permanganate of potassium is apparently a very energetic germicide. Its action is probably due to its strong oxidizing power. You will find it very efficient in cases of chronic, indolent ulcers. Its vigorous action destroys the bacteria present and stimulates the tissues. Its efficiency is enhanced by a subsequent washing with an oxalic acid solution. I would advise you to employ this agent, as I shall describe in the sterilization of the hands, whenever your hands have become infected by a grave septic case. You will find it a safeguard against the transmission of infection. It is employed in solutions of 1-20 to 1-100, according to the intensity of the action desired.

The employment of certain soluble salts of silver, as lately introduced as antiseptics by Credé, of Dresden, seems to open up a new era of antiseptic surgery. Clinical research and experience point to a marked step in advance in these drugs, as they seem to fulfil the requirements of an antiseptic more perfectly than any agent hitherto employed. It is too soon, however, to

recommend their general employment, and they must await the verdict of time.

I have described for you the different methods and agents employed in producing asepsis and antisepsis, and have said that these methods must be combined in operating. How this is done, and the process and technic employed in preparing for, and during an operation, in a private house, will be the subject of my next "talk."

You can readily test the value of antiseptic methods by substituting the antiseptic poultice or fomentation for the old type. The conditions necessary for growth and development of the bacteria that produce suppuration are heat, moisture, and a culture media or food. The old mush or flaxseed poultice furnishes these in perfection. In the treatment of inflammation by poultices, we desire to employ moist heat to relieve the pain and stimulate the local circulation. These results can be attained in a much simpler manner, and with surgical cleanliness, by the use of the antiseptic poultice. It furnishes the heat and moisture essential to this mode of treatment without furnishing the food material in which the bacteria can grow and multiply. On the contrary, the antiseptic poultice has in it a germicide that destroys the bacteria that are found upon the skin, and thus prevents a mixed infection when the abscess chances to break. Where there is an open wound, it sterilizes the discharge and decreases the infection in the wound. It thus decreases rather than adds to the infection present.

The antiseptic poultice is made by soaking absorbent cotton, or any cloth that will readily absorb discharges, if there are any, in an antiseptic solution, as bichlorid of mercury 1-3000, or stronger if the patient's skin will permit. The moisture thus furnished is retained by placing over the cloth a water-proof covering, mackintosh, rubber dam, gutta-percha tissue, oiled silk or parafined paper. This water-proof layer also prevents the heat, which is furnished by the body, from escaping. The cloth can be kept moist by the occasional addition of a little of the antiseptic solution; it should be renewed whenever it becomes soaked with discharges.

If you employ this poultice in the place of those commonly employed, you will be gratified with the results attained, and convinced of the value of antiseptic methods.

TESTING VISION AND ACCOMMODATION.

BY WALTER L. PYLE, A.M., M.D.,
Assistant Surgeon to Wills Eye Hospital, Philadelphia.

THE articles required are: 1. A series of *test-letters* so arranged that they subtend an angle of 5″ at varying distances from 4 to 60 meters. 2. A *reading-card* of type whose letters subtend the same angle from 0.5 to 2 meters. The 0.75 meter type is about the size of the ordinary newspaper type.

These cards may be procured for a merely nominal sum at any optical store.

Mode of Procedure.—The large card of test-letters is fastened to a hook or nail about 6 feet from the floor, and about 6 meters (20 feet) from the chair in which the patient is seated. The letters of the 6-meter line are about on the level with the patient's eye. The card must be well illuminated by daylight or artificial light. The 6-meter distance is not necessary, 4 meters will answer, but in this case we must bear in mind that the patient should read several lines lower.

Always examine each eye separately. Seat the patient facing the card; direct his attention to the test-letters; cover the left eye with a small card and ask him to read on the card as low down as possible. Note the lowest line read correctly or nearly so, and then cover the right eye and test the left in a similar manner. Register the findings as follows: Use 6 as the numerator and the number of meters at the side of the lowest line read as the denominator. This gives the *visual fraction.* For instance, if the patient reads the line marked 12 m. (that is, consisting of letters subtending an angle of 5″ at 12 meters) his visual fraction is $\frac{6}{12}$. Any fraction below $\frac{6}{6}$ indicates defective vision.

But it must be borne in mind that *the mere fact of the patient reading the* $\frac{6}{6}$ *line is no assurance of the absence of refractive error.* The patient may be hyperopic and astigmatic (if in youth, to a very considerable extent), and still read the $\frac{6}{6}$ line by means of extra accommodation, and it is this very extra strain that causes the distressing asthenopic symptoms. This can only be definitely determined by use of a mydriatic.

If the patient already wears glasses and with them he cannot read with each eye separately, $\frac{6}{6}$, he should consult an oculist. If there is considerable discrepancy of vision in the two eyes, there is great likelihood of eye-strain.

If the symptoms cannot be traced to any other cause, or if the patient uses the eyes excessively or viciously, or if the symptoms are especially referred to the eye, even though the vision appears normal, or properly corrected with glasses, the physician should put one drop of a gr. ij to ʒj homatropine solution into *one* eye every five minutes for a half hour, and then if the vision falls to any great extent, the patient is ametropic, likely simple hyperopic or hyperopic and astigmatic. Simple myopic persons see about as well at a distance under a mydriatic as with the accommodation functional.

If the patient is young or is not compelled to use the eyes in his daily vocation and complains of persistent eye-pain or headache untraceable to other causes, the eyes should be put at rest under atropine for ten days, and tested. This is accomplished by the installation daily for two days of one drop of a gr. iv to ʒj solution of atropine into each eye. If the vision falls under the mydriasis, or if the symptoms are relieved, the diagnosis of eye-strain is positive.

Testing Accommodation.—The small reading test-card is brought

slowly up before each eye separately, the other being covered, and the patient is told to fix his gaze on the 0.50 meter type. If he is younger than 21, he should be able to read the 0.50 type easily at from 5 to 7 inches distance, otherwise he is considerably hyperopic or has some extra disturbance with the ciliary muscle, and his case is one for a specialist. If the patient is middle-aged and cannot see the 0.50 type easily at 10-12 inches, he is either presbyopic or hyperopic, and is in need of reading glasses. If there is a discrepancy in the reading-power of the two eyes, the case is especially one for an oculist. If the patient has very poor distant vision, but can read the type easily at 5 inches, he is a myopic.

If the patient is already wearing reading glasses and the type cannot be read easily with each eye at 10-12 inches, his glasses are not strong enough. If he cannot read the 0.50 type with his glasses at a distance of at least 14 inches, his glasses are too strong.

THE PREPARATION NEEDED FOR A CASE OF LABOR.

BY DOWLING BENJAMIN, M.D.

Obstetrician and Gynecologist to the Cooper Hospital, Camden, N. J.

In New York alone, from 1886 to 1887, there were 3,342 deaths from causes incident to child bearing. Of these, 1,947 were due to child-bed fever, or infection during the lying-in period. (See Pepper's System of Medicine, Vol. I.)

Fully half of the deaths, therefore, that occur at the confinement period are due to infection, septicemia, or blood-poisoning, in consequence of germs getting into the system through the abrasions caused by parturition. And you must also remember that, aside from any other lesion, there is always, after every confinement, a large, raw surface left on the interior of the womb by the separation of the afterbirth, which is one of the most dangerous culture fields for the growth of disease germs, and permits their ready entrance into the woman's system.

For the proper and successful care, therefore, of a mother at this important period of her life, it is of the *greatest* consequence that you not only understand but apply the principles of asepsis.

Since the alert members of the profession have thoroughly comprehended this subject, child-bed fever has been so rapidly diminished in frequency as to arouse the hope of causing, ultimately, a case to be considered a rare curiosity. During a practice of twenty years, in which I have endeavored to apply the principles of antisepsis, I have had but one case of puerperal fever, and that, fortunately, recovered.

How, then, shall we proceed to secure our patients against the dangers of sepsis? Call upon your patient shortly after having been engaged, and

explain to her the importance of this subject, and, as well as you can, briefly the principles involved. Then give her the following directions:

1. Keep away, if possible, from all contagious and infectious diseases.

2. Avoid sores (wounds included), and especially erysipelas.

3. Warn her to advise you of any abnormal symptoms, such as headache, dizzy spells, swelled feet, etc., which might point to albuminuria or other dangers.

4. Tell her to have on hand, as soon as the first symptoms of labor begin, or before, if possible, two or three gallons of sterilized water (either boiled or distilled) in a sterilized boiler or pitcher, properly covered from the dust. This must not be cooled by adding cold, unsterilized water — a thing that unskilled attendants will be very apt to do unless you watch them. Even the baths that a patient takes before or after confinement should be in sterilized water, or, at least, aseptic water, and since many cities take their water supply from streams into which their sewage is emptied, this is difficult to do unless the infected water be boiled.

5. All water used in the lying-in room must be sterilized. Also remember that your hands or anything else can be washed much cleaner in a stream that is poured from a pitcher, than if they are dipped into a basin containing the dirty water in which they have been washed, even though no discoloration can be seen in the water.

6. Everything to be used about the patient and bed in the way of clothing, etc., must be washed, boiled, and ironed, wrapped up from the dust in a paper and put away to be ready for use when the time comes. (The conditions present, and the antiseptic preparations, are essentially the same as you would expect to have in a surgical operation.)

7. She must have at least one dozen aseptic pieces of muslin, about fifteen inches square, boiled, washed, and ironed (an old sheet torn up will do), wrapped up in paper and put away to be used for wiping away the discharges, for wash rags, napkins, etc.

8. One large pad, about one yard and a half square, made of cheesecloth, that has been boiled in water containing a small quantity of soda, and stuffed with new cotton, or, what is better, absorbent cotton. If ordinary cotton is used, it will have to be baked for an hour, to secure sterilization.

About a pound and a half of cotton will be enough, although two pounds would not be too much. This is to place under the patient during confinement, first, second and third stages; and must be removed soon after the first stage, to be replaced by a lighter one, also sterilized. Everything, of course, if the least bit soiled, must be removed from the patient, bed and child, promptly, lest culture fields be formed for germs.

9. One sheet of impervious cloth, about a yard and a half square, to be put next to the mattress for its protection.

10. One maternity binder, about eighteen inches wide and long enough to go around the patient, sterilized.

11. One piece of sterilized soap, hydronapthol or carbolized.

12. One new sterilized syringe, "Household No. 3" or "Fountain" will do.

13. Two-ounce box of antiseptic cosmoline or sweet oil.

14. One skein of sterilized silk floss.

This much preparation, at least, I have always been in the habit of ordering my patients to make, and this is within the reach of those of the most ordinary means. These things should all be wrapped up properly from the dust, so that they may all be found without confusion when the time comes.

For a more complete and perfect outfit you are referred to the maternity outfit or antiseptic obstetrical case, which is made in accordance with my directions by Beringer, of Camden, N. J. The adoption generally of the precautions herein suggested and urged will introduce an era in obstetrical practice, marked by a lower death rate than that of any preceding period. In the lying-in room, of course, the nurse should be the picture of neatness, cleanliness, and a pattern of aseptic practice.

By this careful preparation we will generally be able to avoid that unfortunate and fatal affliction of motherhood, puerperal fever.

SOME OFTEN-NEGLECTED POINTS IN EXAMINATIONS OF THE URINE.

BY BOARDMAN REED, M.D.,

Philadelphia.

To examine the urine for albumen and sugar merely is much better than not to examine it at all. Even to take the specific gravity and make the Heller's or the heat and nitric acid test for albumen may afford valuable information in the management of a case. But you should do a great deal more with the urine when the patient is chronically out of health. For, a high specific gravity alone by no means proves the presence of sugar, nor a low specific gravity renal inadequacy, and albumen without casts does not necessarily signify Bright's disease. Nor does the absence of both albumen and casts at a single examination exclude the possibility of diseased kidneys. And the urine very often presents other abnormal conditions which indicate disease in other organs than the kidneys. These are trite truths for experts in physical diagnosis, but need to be emphasized for many others.

Unfortunately, the older teachings on this subject were deficient. A recent medical writer of more than ordinary prominence and ability in very properly calling attention to the importance of more frequent analyses of the urine, names the following as the only points concerning which it is necessary in most cases to examine: "Quantity, color, clearness, odor, reac-

tion, specific gravity, albumen, sugar, sediment." This list does not include indican, the degree of acidity, the total amount of solids excreted in twenty-four hours, or even the amount of the familiar uric acid, all of which are most important.

In my laboratory, out of many hundreds of urinary analyses made during the past year, albumen was present in two cases and sugar in one only. On the other hand, in fully one-half the cases an excess of indican was found. This indicanuria is most frequently a consequence of excessive putrefaction in the intestines, which usually involves more or less auto-intoxication and many resulting nervous symptoms, often of a serious and distressing character. It has also been observed in unhealthy pleuritic exudation and in peritonitis with putrid pus (Von Jaksch). The same author cites Hochsinger as having found that the urine of new-born children was free from indican and that in healthy infants it occurs only in traces. According to the latter observer, "it becomes more abundant in intestinal disorders, and is always most so when these are attended by diarrhea." My own experience fully confirms this last observation of Hochsinger. The latter recorded also that "tuberculosis, whether affecting the intestinal tract or not, was always accompanied by profuse indicanuria."

The ether-sulphuric acid compounds generally, or aromatic sulphates, when present in the urine, have a significance similar to that of indican, but the methods of detecting them are complicated and tedious — scarcely practicable except in well-equipped laboratories.

In a considerable proportion of my cases there has been revealed also an abnormally high total acidity, made up largely, as a rule, of uric acid and the products of fermentation. Patients with over-acid urine are apt to be sufferers from intestinal indigestion, constipation, rheumatism, neuralgia, headaches or insomnia, and often several of these ailments, as well as a variety of nervous symptoms. Not till the excessively acid condition of the system has been relieved by improving the digestion, by alkaline diuretics and an appropriate diet, including an abundance of pure water, do the patients make any substantial improvement in health.

The falling of the total amount of solids passed by the kidneys in twenty-four hours, below an average of 1,000 grains in a person weighing 140 pounds or upward, indicates a depression of the renal function. If repeated tests always show a markedly diminished excretion of solids after the institution of measures to increase it, there is reason to suspect beginning chronic interstitial nephritis, even though there are no decided symptoms and no albumen or casts.

Uric acid excess is one of the most common as well as one of the most harmful morbid conditions that may be revealed by a thorough examination of the urine. Without going to the length that Haig does in attributing a very large proportion of chronic internal diseases to this one pestiferous

product, it must be admitted that its presence in the system in unusually large amounts is always accompanied by decidedly unpleasant and often by most distressing symptoms, which may be ultimately very dangerous to life.

Certainly, then, you will agree that these are all points which should by no means be neglected in examining the urine.

It was not my original intention to give any detailed account here of the methods by which one may decide when there is indicanuria, uricacidemia, a deficient secretion of solids, or an excessive total acidity, since Tyson, Musser, Von Noorden, Von Jaksch, Purdy and all the recent standard authors on urinalysis or physical diagnosis describe them; but it will doubtless be a convenience to numerous physicians to have the more simple tests briefly described in this connection.

Test for Indican.

There are many tests for indican, most of which are rather complicated to be serviceable to the busy general practitioner. By the following method, however, it is easy to decide almost instantly whether there is present any notable excess of indican:

Pour into a small test-tube a drachm of pure concentrated hydrochloric acid and add about thirty drops of the urine to be tested. Shake the mixture or stir with a glass rod. If there should be a decided excess of indican, a purplish blue or violet tint will appear within a minute or two. If such a reaction does not occur, add one to three drops of strong fuming nitric acid. If this should not develop one of the above-mentioned colors, there is no indicanuria.

Test for the Total Amount of Solids.

A rough and hasty but sufficiently accurate way of estimating the total amount of solids excreted by the kidneys in twenty-four hours is as follows:

Have all the urine passed from, say, 8 A.M. one day to 7 A.M. the next, saved, measured and the number of ounces noted. Then multiply the number of ounces by the last two figures that represent the specific gravity of a sample out of the entire collected urine and add to the product one-tenth of itself. For example, if 50 ounces of urine were passed in the aggregate during one day and night and the specific gravity of a sample taken out of the collection were 1,020, this would be the calculation:

$50 \times 20 = 1{,}000$. Then, adding one-tenth of $1{,}000 = 100$, would make 1,100, representing approximately the number of grains of solid matters excreted. This would be normal for a person weighing from 130 to 140 pounds. Those weighing less or more should excrete relatively less or more solids. After middle age the ratio of excretion is usually found somewhat diminished.

Tests for Uric Acid.

As to uric acid, a copious deposit of red sand in the vessel in which urine has stood for three or four hours only, points usually to excessive excretion of this substance, though a very decided acidity of the urine from other causes, such as abundant fermentation in the gastro-intestinal tract, or a marked scantiness of the urine, may lead to such a large precipitation of uric acid, even when only a moderate proportion of it is being excreted. The lower powers of the microscope will also reveal a great number of uric-acid crystals under the same conditions.

A quantitative test for uric acid which is scientifically accurate and delicate, and at the same time rapid and simple, has yet to be discovered.

The following method of Heintz, which gives fairly reliable results for clinical purposes, is the easiest and simplest of all, and yet even this involves a long delay in reaching the result.

Take 200 cubic centimeters of urine, and add to it 10 cubic centimeters of hydrochloric acid. Let stand for 24 hours (better 48 hours) in a cool room. Collect the precipitated uric-acid crystals on a previously-weighed filter, and wash with cold distilled water. Dry the filter and uric-acid crystals in a desiccator (or it will dry in a few hours in any warm place), and weigh. By subtracting the weight of the filter, the result will be the weight of the uric acid in 200 cubic centimeters of urine. If albumen be present, it should first be removed, and the urine should always be filtered before applying the test, otherwise subsequent filtration is very difficult.

Test for the Total Acidity.

As to determining the degree of acidity or amount of total acidity in urine, it is a markedly simple and rapid procedure when one knows how, and it requires in the way of apparatus merely an inexpensive burette, or long glass tube graduated to tenths or fifths of a cubic centimeter, a graduated cubic centimeter measure, and a small glass cup or tumbler holding two to four ounces. There are required also a one-tenth normal (decinormal) solution of caustic soda and a one per cent. alcoholic solution of phenolphthalein, both to be obtained of most wholesale chemists. Partly fill the burette with the soda solution and note down the reading or exact figure opposite the upper limit of the solution, and for this purpose it is the rule to consider the bottom rather than the top of the curve which liquid always assumes in a tube at its upper end. Measure out and place in the glass receptacle 10 c.c. of the urine and add to it one or two drops of the phenolphthalein. Then add, drop by drop, the soda solution from the burette until the red color thus produced no longer disappears upon shaking. A uniform pale red color will now tinge the entire 10 c.c. of urine, indicating that the acidity of the latter is about neutralized. The best authorities advise that one should go on continuously adding further drops of the soda solution until the red color is no longer deepened by each drop as it falls

into the liquid. Then read the burette again and subtract the figure from that first obtained, multiply the remainder by 10, and the product is the total acidity. In the absence of a burette with its lower end so arranged as to allow the escape of the contents drop by drop, one may get on quite well by first placing a measured amount of the soda solution in any receptacle, and then taking up in an ordinary rubber-topped pipette and dropping out of this into the measured urine so much of the soda solution as is necessary to neutralize the former completely in the same manner described above. When this has been accomplished, the remaining test solution will need to be measured again, and the difference between the two measurements multiplied by 10 will be the figure representing the total acidity.

For example, suppose that, to begin with, there was in the burette or other receptacle, 20.2 c.c. of the soda solution, and after the titration (as the whole process is called) there is 16.1 c.c. left. Subtracting, it is found that 4.1 c.c. of the solution have been used. Multiplying these figures by 10 (since 10 c.c. of urine were used and all such calculations are upon the basis of 100 cubic centimeters), we have 41 as the total acidity.

Important as this test is to gauge the degree of acidity of the system generally and prevent the blood from becoming too feebly alkaline, it has been so little practised that there is not yet by any means an agreement among different observers as to the normal acidity of the urine; but, judging by my own by no means small experience, it is safe to put it at between 20 and 30. A wide departure from these limits in either direction threatens an impairment of the health if long continued, when it does not indicate an impairment already established.

REPORTS ON INTERESTING CASES.

A CASE OF ANENCEPHALUS.

BY ERNEST B. SANGREE, A.M., M.D.,

Professor of Pathology and Bacteriology in the Medical Department of the Vanderbilt University, Nashville, Tenn.

THE accompanying photograph is that of an anencephalus recently given to the museum by Dr. Jos. D. Neil, of this city. I asked Dr. Neil kindly to give me particulars of the case, and received from him the following note: "I was called to see Mrs. G., aet. 35, white, mother of three children. I found her in labor after an indefinite period of gestation. Upon examination I found the os dilated, contents of the uterus high up, but could make out a soft mass. In half an hour I could reach the axilla, left arm, ear, nose and mouth, and then knew that I had to deal with an anencephalus, having

had a nearly similar case fifteen years before. The patient was delivered without special incident of a child normal with exception of the head. There is a history of strained marital relations. The mother is of a nervous temperament. She says that during her pregnancy she very much desired a pig's head, which her husband refused to get. She secured one, anyway, and upon her husband's return he threw it into the alley. She exclaimed she hoped God would make her child headless. Was this fulfilment due to maternal impression, or did God intervene?"

The child is apparently perfectly formed, with exception of the absent brain and skull bones and an epithelial pendulous growth, 1 cm. from the left angle of the mouth, 1 cm. and a half long, and 1 cm. in diameter at the thickest part. There seems to be an entire absence of brain substance; at least, I could not find any, though the search was not as thoroughly performed as I should like, because the specimen had been in alcohol some months, dissection was difficult, and I should have had to destroy the head to make a thorough examination. What there is besides face appears to be little but bone, that immediately behind the eyes being 1 cm. in thickness. The monstrosity was not alive at the time of birth, but the mother had felt movement up to within four days before confinement. The pig's head incident occurred in the third month of gestation.

A Case of Malformations. Dr. W. S. Newcomet exhibited lately before the Philadelphia Pediatric Society an infant that had a meningocele, an epispadias and a pouch-like protrusion of the abdomen between the umbilicus and symphysis pubis, probably the posterior wall of the bladder.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

WILLIAM EWART, M.D. (Cantab.), F.R.C.P. (Lond.),

Senior Physician to, and Joint Lecturer on Medicine at St. George's Hospital; Physician to the Belgrave Hospital for Children.

FRANK BILLINGS, M.S., M.D.,

Professor of Medicine, Rush Medical College, Chicago; Attending Physician Cook County Hospital and St. Luke's Hospital; Consulting Physician to Charity Hospital, etc.,

AND

WILLIAM E. HUGHES, M.D.,

Professor of Clinical Medicine, Medico-Chirurgical College; Visiting Physician to the Philadelphia Hospital; President of the Pathological Society; Pathologist to the Presbyterian Hospital, etc.,

AND

GEORGE W. PFROM, M.D.,

Lecturer on Materia Medica and Therapeutics, Medico-Chirurgical College; Assistant Visiting Physician and Chief of Medical Dispensary, Medico-Chirurgical Hospital, etc.

Clinical Studies with Spleen and Thyroid Extract. Bois and Kerr (*Brit. Med. Jour.*, 1898) sum up the result of their investigations as follows: (1) That the most general result of treatment by spleen extract is physical improvement. (2) That its action on the mental state is undoubtedly evident in a fair proportion of cases, especially in adolescents, sometimes direct, at other times owing to improved physical conditions. (3) That it materially assists in rendering thyroid treatment efficacious, the patient, after a course of spleen treatment, being more susceptible to the action of thyroid. (4) That where it fails there may be a defect in the preparation of the extract. They have found that capsules of the liquid extract are best. The desiccated spleen, which is usually employed for tablets, must necessarily lose some of its active properties. (5) It is best given at least an hour before meals. Spleen extract should be worthy of a place in the treatment of mental diseases.

The Pretuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and Some Aids to its Diagnosis. Loomis (*Med. Record*, Dec., 1898) believes that there is a "pretuberculous" stage, which bears the same relation to fully developed phthisis that transient albuminuria does to nephritis. Certain phenomena preceding tuberculosis, such as progressive loss of weight, coming on without any apparent cause, digestive and circulatory disturbances, etc., occur with sufficient frequency to establish certain diagnostic data. As a result of a study of cases of his own, as well as the perusal of some of the French literature bearing on this subject, the author has arrived at the following conclusions: (1) It is possible in many cases, especially in chloro-anæmics, to diagnose phthisis previous to the appearance of physical signs or of tubercle bacilli in

the sputum. (2) Weight, respiratory capacity, and chest measurement have no value in establishing the possibilities of the development of phthisis in themselves, but must be considered in relation to the height of the person, when they furnish three important aids to diagnosis. (3) Corpulence is obtained by dividing the weight expressed in pounds by the height expressed in feet (in a normal man this should be 26; in a woman, 23). (4) Thoracic perimeter is found by taking two measurements of the circumference of the chest — one at the moment of forced expiration, the other at the end of a forced inspiration. The average of these two measurements should never be less than half the height. (5) Vital capacity is the amount of air expressed in cubic inches which can be exhaled after a full inspiration. Normally it should bear the relation to the height of 3 to 1 for a man and 2 to 1 for a woman (*i. e.*, for every inch of height there should be 3 cubic inches of vital capacity). (6) Chloro-anemia and persistent and unexplained disturbances of the digestive system are symptoms of the pretuberculous stage of phthisis. (7) There are two characteristics of the pulse found in the pretuberculous and early stage of phthisis: (*a*) Change of position has practically no influence on its rhythm; (*b*) relative feebleness of arterial pressure. [See editorial on this subject.—B. R.]

Treatment of Diabetes Mellitus. Tyson (*Charlotte Med. Jour.*, Vol. XIII., No. 5) claims that while glycemia is of itself a symptom, it is at the same time a cause of other symptoms, such as furuncle, cataract and neuritis. The complete cure of this symptom he considers as a practical cure of the disease, whatever its origin. To accomplish this, he relies principally on diet, which need not be exclusive in all cases. In fact, glucose is produced also when only proteids are ingested, the albumin splitting up into the carbohydrate radical. The mild cases are relieved by diet, and clinical experience abundantly proves that so long as the urine is free from sugar, or the amount of the latter is less than 2 per cent., the patients are practically well. Experience also attests that a pure proteid diet, kept up for a long time, will lead to starvation. At the same time the author considers it a good practice, when possible, to take the glucose entirely out of the urine by a 24 or 48 hours' restriction to a proteid diet, about once a month. It does no harm to the patient, while it points out his precise condition. In cases which are not amenable to the treatment by diet, hygiene, massage, etc., drugs are often necessary. Of these the author has found arsenic of great service. The best preparation is Fowler's solution. The dose should be very small, not above 5 minims three times a day. Next to arsenic is codein, not because it is second in efficiency, but because it is not so harmless. The initial dose should be $\frac{1}{4}$ gr. after each meal, adding a quarter of a grain a day, first at bedtime, until the desired effect is produced. The effect of this drug is the more satisfactory the less constipation it produces. As most important adjuvants the author considers the alkalies or the alkaline mineral waters. Salicylates are also efficient in mild cases associated with gout. The nitrate of uranium, as well as benzosol, he has found, after repeated trial, to be of no value whatever. In the treatment of threatening diabetic coma, the patient is placed on a diet of

milk and vichy, equal parts. Hypodermoclysis with normal salt solution is of undoubted advantage. Stimulation by ammonia and the use of citrate of potassium in 20 gr. doses every two hours are also useful. A. R.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

A. E. SANSOM, M.D., F.R.C.P.,

Physician and Lecturer on Clinical Medicine in the London Hospital; Consulting Physician, N. E. Hospital for Children; Physician, Royal Albert Orphan Asylum; Physician, Royal Hospital for Diseases of Chest, etc.,

AND

JOHN H. MUSSER, M.D.,

Assistant Professor of Clinical Medicine, University of Pennsylvania; Physician to the Philadelphia and Presbyterian Hospitals, etc.,

ASSISTED BY

J. DUTTON STEELE, M.D.,

Assistant Demonstrator Morbid Anatomy, University of Pennsylvania.

Pseudo-Tuberculosis Hominis Streptothricha. (*From the Pathological Laboratory of the Johns Hopkins Hospital.*) Flexner (*Jour. of Experimental Med.,* Vol. III., Nos. 4 and 5) reports a case which presented the symptoms and clinical signs of pulmonary tuberculosis. Absence of sputum prevented a bacteriological diagnosis. At the autopsy the lungs were found to be extensively consolidated, with numerous cavities. The omentum was thickened and studded by nodules resembling tubercles. Microscopically, the areas in the lung were found to consist largely of polynuclear leucocytes, with great fragmentation of their nuclei. There was a marked tendency for these areas to break down with the formation of cavities. The nodules in the omentum consisted of polynuclear leucocytes, epithelioidal cells and a very few giant cells. The tissue failed to show tubercle bacilli, but a streptothrix was found, differing somewhat from the so-called *streptothrix pseudo-tuberculosa.* It is acknowledged that the bacillus tuberculosis, under certain conditions, may appear in an irregular branched form, of which, however, little is known. A case somewhat similar to Flexner's was described simultaneously by Buchholz. The Gram-Weigert stain, with the substitution of carbol-fuchsin for gentian-violet, is recommended as the best method of demonstrating the streptothrix. Attempts to cultivate it were a failure.

Unusual Types of Fever in True Pneumonia. Japha, of Berlin (*Deutsches Archiv. fur klin. Medicin.,* Band. 62, Dec., 1898), reviews the various atypical fever curves in undoubted cases of croupous pneumonia. In the type with intermitting or remitting fever, the curve presents periods of subsidence, but the apyrexia is very transient and the physical signs remain unchanged. In the so-called "Intermitting Pneumonia," the periods of

fever are interrupted by intervals of apyrexia in which the signs of consolidation are less pronounced. This form is probably the expression of successive exacerbations of a "Wandering Pneumonia." In the type known as "Recurring Pneumonia," after the crisis and subsidence of the symptoms there occurs a second attack during the period of convalescence. The causes for the irregularities in the course of cases of true pneumonia are not clear. Personal idiosyncrasy, perhaps, plays a part. It is impossible to make an etiological distinction between the different forms. Indeed, they are not sharply distinguished, and all are probably caused by the same micro-organisms. It would be of interest to thoroughly investigate all such cases by many observations, by different men, by culture of the blood and examination of the sputum and material obtained by puncture of the lung. Japha suggests as possible factors in the production of the irregular fever curve, the fact that mixed infection, by malaria, influenza, tuberculosis, or the streptococcus, may take place. The question of the production of immunity in pneumonia is complicated by the occurrence of relapses. However, the fact that such recurrences are often abortive, or, at least, of a mild type, suggests that some degree of immunity was present.

Mitral Stenosis and its Early Diagnosis. Gibbes (*Brit. Med. Jour.,* Jan., 1899) read a paper on this subject before the Chelsea Clinical Society. The question chiefly dealt with was, Are there no reliable signs by which we can diagnose pure mitral stenosis before it has advanced far enough to produce a presystolic *bruit?* He stated that some authorities referred to the advisability of suspecting it in cases where the first sound was short and sharp, others to a first sound of this character followed by a reduplicated second sound. He was unable to accept these signs by themselves, as they occurred so often in other diseases. In mitral stenosis there was a peculiar rhythm heard over a limited area, with or without a presystolic *bruit;* and when this persisted, or became intensified on lying down, in cases where the presystolic *bruit* had not yet developed, he considered it much more diagnostic — it consisted of a prolonged diastole, a short, slapping, abruptly-ending first sound, followed by a reduplicated second sound. He had directed his attention to this for the last two years, and had noted these phenomena in 192 cases while standing, 75 being cases of mitral stenosis in one or other of Sir W. Broadbent's three stages. In 76 they had entirely passed off on lying down, and in the remaining 41 they had persisted or become intensified in lying. Eight of these he had watched developing into ordinary mitral stenosis. He showed cases and tracings illustrating these points.

Gastric Ulcer in an Infant Two Months Old. Dr. Cade reports a rare case of a child, two months old, suffering for four weeks with vomiting and hematemesis; finally, general peritonitis set in, and the child died; autopsy showed that the peritonitis was due to a perforated round ulcer of the stomach.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

SIDNEY MARTIN, M.D. (Lond.),

Professor of Pathology in University College; Physician to University College Hospital; Assistant Physician to Hospital for Consumption, Brompton, England, etc.,

AND

BOARDMAN REED, M.D.,

Philadelphia,

ASSISTED BY

A. ROBIN, M.D.

An Experimental Study of the Effects of Hydrogen Dioxide upon the Normal Action of Unorganized Ferments. Egbert (*N. Y. Med. Jour.*, Dec., 1898) reports some of his experiments performed with a view to determine the action of hydrogen dioxide upon digestion. Experiments were made with cooked starch, to which saliva was added with and without the addition of the peroxide of hydrogen. It was found that the presence of the latter did not interfere with the diastatic action of the ptyalin. In fact, after the person whose saliva was used in the experiment had rinsed his mouth with a 3 per cent. solution of hydrogen dioxide, the saliva displayed greater diastatic action. It was similarly found that hydrogen dioxide does not interfere with proteid digestion. All these experiments establish the fact that hydrogen dioxide, instead of retarding the normal action of the digestive ferments, may even aid their activity. Further unpublished experiments which the author has made, show that, under certain circumstances at least, diffusion of the products of digestion through animal membrane, and their further elaboration for the nourishment of the tissues, may be facilitated by hydrogen dioxide. The author refers also to some recent clinical experience with hydrogen dioxide in which he cured chronic gastric catarrh by the internal administration of the same remedy.

A Contribution to the Clinical Study of the Gastric Juice. Clarke (*Brit. Med. Jour.*, Dec., 1898) reports two instructive cases illustrating the importance, both for diagnostic and therapeutic purposes, of a chemical examination of the contents of the stomach. One was an obscure case of tabes dorsalis characterized by gastric crises. At certain intervals, which became more frequent as the disease advanced, the patient had severe attacks of vomiting, accompanied by a sensation of discomfort in the pit of the stomach, and lasting from one to three days. The vomit was yellowish or green in color and often like coffee grounds. At one time he vomited about 3 pints of dark-red fluid (blood) with some clots. Between the attacks the patient was entirely free from any gastric disturbance, except hyperacidity, with a slight amount of lactic acid. It is interesting to note that during the whole duration of the gastric crises there was a complete absence of HCl and presence of abundant lactic acid. This case well illustrates the

importance of always bearing in mind the possibility of tabes dorsalis in obscure affections of the stomach. The second case was one of neurasthenia, presenting an acidity of the gastric juice. The patient, a young man 19 years of age, complained of a weak heart, palpitation, irregularity of pulse and excessive flatulence after food. Examination of the stomach contents, an hour and a half after a test meal, showed a total acidity of 30, chiefly due to acid salts, complete absence of free HCl, small amount of lactic acid and a marked rosy-red color with Fehling's solution. Four to five hours after meals the stomach was found empty. Under the use of dilute HCl, strychnine and pepsin in conjunction with a well-regulated diet, the patient improved markedly and was discharged from the hospital. Three weeks later he returned as bad as ever, the stomach somewhat dilated. Examinations of the gastric contents on three occasions, 1, 2 and 3 hours after a test meal, revealed a total acidity of 16, 23, and 16, respectively. HCl was absent. A small quantity of lactic acid and some butyric acid were present. The treatment consisted of a dry diet of easily-digestible food, a mixture of HCl, dil., m. xv-xx, liq. strych., m. iii, strontii bromidi, gr. x after meals, lavage and baths. Improvement was marked, but the absence of HCl still continued, the acidity varying from 7 to 16. Lactic acid was present on each occasion. Only on February 11th (5 months after second admission) was a slight amount of free HCl found, the acidity in this instance being 37. This case, according to the author, illustrates what is called "nervous dyspepsia," the interesting feature being the complete absence of HCl for such a long period.

A Case of Chronic Constipation Ending Fatally and Associated with Enormous Dilatation of the Sigmoid Flexure. Hichens (*Lancet,* Oct., 1898) reports the case of a young man who, from birth, had been suffering from chronic constipation, his bowels never moving without recourse to artificial means, such as large enemas, drugs, etc. The intervals between the motions were usually from 10 days to 2 weeks. This man died suddenly, having been seized with a severe pain on the day previous to his death. A month before, he suffered from an attack of influenza, but had recovered. The autopsy revealed an enormously distended sigmoid flexure, the summit of which passed behind the ribs and xiphisternum. All the abdominal viscera were entirely concealed. The liver was pushed upward and backward, the lungs were compressed, the heart rotated upward and outward. The total length of the flexure was 22½ inches. Fourteen inches from its upper end a large cicatrix was found, formed by an almost healed ulcer. All the other organs were practically normal. The immediate cause of death could not apparently be determined.

The Non-Medicinal Treatment of Habitual Constipation. Lockwood (*Med. Rec.,* Nov., 1898) considers the best method of treating constipation that which comprises diet, exercise, and general hygiene. The use of drugs is prejudicial, as it inflicts serious damage to the gastro-intestinal tract by the lessening of digestive and motor powers of the stomach and the irritation of the intestinal mucous membrane. The contraindications to

the use of saline and vegetable cathartics are: (1) All the conditions characterized by diminished secretory power; (2) all conditions of impaired muscular power of the stomach and intestine; (3) all conditions of inflammation of the stomach or intestines; and (4) in children, owing to the proneness in them to inflammation of the intestinal mucosa. Enemas facilitate the absorption of ptomaines by the liquefaction of the feces. The articles of diet most useful are coarse vegetables, such as spinach, turnips, and sprouts (these are best taken in the form of purée); coarse breads one day old, and cereals. Sugars are also useful, but should be taken in the form of honey or lactose. Buttermilk or Kumyss, 3 glasses a day; fats in the form of butter, one-eighth to one-half pound daily, or cod-liver oil; and organic acids are useful as peristaltic excitors. Another excellent remedy is made up of 2 parts of prunes and one of figs. Raw fruit is not desirable. Huckleberries and cranberries should be especially avoided. In general, the diet should be dry. Exercise, massage, abdominal gymnastics, electricity, abdominal belt and hydrotherapy are all very important adjuvants to the treatment. Massage is contraindicated in all inflammatory and spastic conditions. Sedative remedies are indicated in intestinal spasm, a quite frequent condition, caused primarily by hyperacidity. The author has also found Kussmaul's oil irrigations very beneficial.

NEUROLOGY.

UNDER THE CHARGE OF

WILLIAM G. SPILLER, M.D.,

Professor of Diseases of the Nervous System in the Philadelphia Polyclinic; Associate in the William Pepper Clinical Laboratory, University of Pennsylvania, etc.,

AND

J. WILLIAM McCONNELL, M.D.,

Associate in Neurology in the Philadelphia Polyclinic.

Zur Lehre der spinalen neuritischen Muskelatrophie, etc. (Contribution to the Study of Spinal, Neuritic, Muscular Atrophy, etc.). E. Siemerling (*Archiv. für Psychiatrie,* Vol. XXXI., Nos. 1 and 2) refers to the fact that cases of progressive neural muscular atrophy with necropsy are very rare. This form of disease is now quite generally recognized. Hoffmann, who has done so much to make it known, regards it as holding an intermediate place between spinal myopathy and muscular dystrophy. In the case which Siemerling reports, atrophy began in the legs of a patient when he was five years of age, and extended to the thighs. Deformity of the feet was also noticed at this time. Two years later, wasting of the hands was observed. When the boy was thirteen years old, walking became impossible, and, when he was twenty, reflex rigidity of the pupils, nasal speech, intense atrophy of the trunk and of all the extremities, complete flaccid paralysis of the lower limbs with contracture at the right knee, incomplete paralysis of the upper limbs, fibrillary tremors in the intercostal muscles, lost knee-jerks, diminution or abolition of the electrical

reactions, imperfect perception of pain, and mental depression, were noted. The microscope showed degeneration of the posterior and lateral columns, most marked in the lower thoracic and upper lumbar regions, atrophy of the cells of the anterior horns, atrophy of Clarke's columns and of the anterior roots, and degeneration of the spinal ganglia, peripheral nerves and muscles. In the few necropsies which have been obtained in cases of progressive neural muscular atrophy, degeneration of the nerves, muscles and posterior columns has been found, and in some cases the cells of the anterior horns of the spinal cord have been involved. The marked alteration of the lateral columns and of the spinal ganglia in Siemerling's case were unusual findings. No proof has been offered that the disease is due to toxic causes. Siemerling believes that the degenerative process begins in the portions of the posterior roots within the spinal cord.

Médication Thyroidienne et Arsenic (Thyroid Medication and Arsenic). Bédart and Mabille (*Comptes rendus de la Soc. de Biologie,* 1898, p. 556) discuss this subject. Mabille, in treating a patient with goitre, gave arsenic in addition to the thyroid medication, in order to avoid the bad effects of the latter. The excitement, palpitation of the heart and tremor disappeared quite rapidly under the influence of arsenic, but reappeared when the arsenic was discontinued and the thyroid treatment employed alone. Bédart and Mabille report the results of their experiments on dogs and rabbits to determine the effects of the combined treatment. The fresh thyroid gland of the sheep and Fowler's solution were used. When the gland was administered alone, the cardiac pulsations increased very rapidly, reaching as high as 190; the animals presented manifestations of irritability after six or seven days and tremor developed. When arsenic and the thyroid gland were given together, the pulsations after a time decreased to 100 or even 90, became more normal in force and regularity, and phenomena of irritability and tremor were not present. Considerable decrease in body weight occurred in the dogs when thyroid alone was given, but the decrease was much less when arsenic was added.

The Stigmata of Nervous Syphilis. Rothwell (*Jour. Amer. Med. Assoc.,* Nov. 19, 1898) considers some of the most common evidences of this condition. Localizing symptoms, similar to those produced by non-specific lesions, occur and have the same anatomical causes, the associated symptoms determining the real nature of the disease. He regards the meninges and the blood-vessels of the convexity of the hemispheres and the base of the brain, especially about the cranial nerves, as the most vulnerable portions of the neuraxis. Lesions may be focal or diffuse, and the symptoms are both multiple and multiform. Exceptions are found, however, as, for instance, in the isolated loss of the iritic reflex to light. The symptoms are transitory in character when directly due to a specific process, but the results of secondary lesions, that is, necroses or degenerations, are usually permanent. In other words, a uniformly progressive course in a disease is a probable indication of its non-specific character. Among the stigmata, headache possibly holds first place. It is found in three-fourths of all cases of cerebral syphilis. It is intense and usually described as deep-seated and localized in a definite

region. Exacerbations are common and are followed by remissions or intermissions. It is almost always worse at night, and is often accompanied by evidences of mental change. Insomnia is one of the early manifestations of the syphilitic disease, but may cease on the supervention of motor phenomena. Somnolency is also a prodrome of cerebral syphilis. Middle life seems to be the period in which these stigmata of nervous syphilis are most likely to become manifest.

Malarial Peripheral Neuritis. Highet (*Jour. Tropical Med.*, Nov., 1898) presents the results of a study of ten cases of malarial neuritis. Intermittent fever, persisting for a long time, or remittent fever with frequent exacerbations, is followed after some months by attacks of pain in the legs and knees. These pains are worse at night, and are sometimes associated with cramp of the muscles. Later the knees feel weak and give way, the limbs become painful in the daytime as well as at night, and the pain extends to the thighs, the back and the arms. Fever persists, the pain interferes with sleep, the weakness may become paralysis, cutaneous sensibility is blunted, and paresthesiæ are marked. The loss of muscular power may assume a remittent character. Hemeralopia may occur. The spleen and liver are enlarged. Deep pressure over the muscles causes pain. The tissues become flabby and may atrophy. Effusion into the joints sometimes occurs. The condition of the heart is variable; at one time it is quiet, and again it is rapid, with arhythmia. Angina and tachycardia have been observed. Anemia, cardiac dilatation and hemic murmurs are noted in some cases. Occasionally there is some edema of the feet. Highet considers malarial peripheral neuritis to be a toxic affection of the nerves, the toxin being the product of the malarial germ. A single attack of fever rarely causes well-marked neuritis; the cumulative action of the poison on the nerves being required to bring about the pathological changes which give rise to the symptoms. The period of incubation extends on an average over eight months. Removal of the cause and efficient hygienic and medicinal treatment usually give good recovery. The diagnosis of the affection must, in most cases, be made from beri-beri. The principal points of difference are that in malarial peripheral neuritis we have marked anemia, mild or absent heart symptoms, enlarged spleen, neuritis preceded by fever and often associated with it, the long incubation, the remittent character, the presence of plasmodium, the shuffling gait when loss of power is marked, and the readiness of cure. In beri-beri affection of the heart is a regular feature, local edema and serous effusions occur, the onset is rapid and usually attended with fever, there is no plasmodium, the gait is equine and typical, and sudden death is common. As the diseases occur in the same regions, one must think of mixed infection.

Internal Use of Ichthyol in Acne. Dr. Tessner administers 5 to 8 grs. of ichthyol three times daily in pills or capsules, with the result that it regulates the bowels, improves digestion, and has a curative effect on the skin affection.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF
PROF. DR. KARL VON NOORDEN,
Of Frankfort, Germany,
AND
JAMES TYSON, M.D.,
Clinical Professor of Medicine, University of Pennsylvania, etc.,
ASSISTED BY
A. ROBIN, M.D.

Experiences in Primary Renal Tuberculosis. J. Israel (*D. Med. Wochenschrift,* No. 28, 1898) finds that primary tuberculosis of the kidneys is more frequent than secondary. Of the 21 cases operated on for renal tuberculosis, 16 were undoubtedly primary. It is more frequent in women, in whom it was found in 66⅔ per cent. of all operated cases. Most of the cases are unilateral. In only two cases (12.5 per cent.) was the affection bilateral. The chronic cases appear in three anatomic and clinical forms. Most frequent is the caseo-cavernous form (81 per cent.). In this form there is usually also involvement of the capsule, which appears in 4 forms: as lipomatous sclerotic thickening; as perinephritic abscess; the fungous form, and, finally, in the form of isolated large nodules in the capsule. The second form of renal tuberculosis is the very rare tuberculous ulceration characterized by profuse, long-continued hematuria. The third form is the one in which the entire organ is studded with nodules, arranged in the form of rays. In this case there is often involvement of the second kidney or the lung. If left to take its own course, the tubercular disease of the kidney leads to ureteritis and periureteritis. Then the bladder becomes involved, the affection being limited for a long time to the half corresponding to the diseased kidney. The author has observed secondary tuberculosis of the bladder in 43.75 per cent. of the operated cases. The coexistence of tuberculosis of the lungs was found in half of the cases. Of great diagnostic significance is the initial hematuria, which was observed in 16 cases of primary renal tuberculosis. In 4 cases it was the only initial symptom present. The kidney is always enlarged to about twice the size of the normal. Palpation is accompanied by very little pain. Bacilli were found only when the bladder was also affected. Casts are seldom found. The amount of albumin in the urine is slight, not above 0.5 per m. Red blood corpuscles are always present. Of the general symptoms, fever in primary tuberculosis was observed in 25 per cent.; when the bladder was involved, in 80 per cent. Loss of weight and decrease of the number of the red blood corpuscles was observed in all cases; in some the reduction of hemoglobin amounted to 50 per cent. Diarrhea was often present. It was not due to intestinal tuberculosis, for it rapidly subsided after nephrectomy.

Movable Kidney with Special Reference to its Influence on the Nervous System. Suckling (*Edinburgh Med. Jour.,* 1898) tells how to diagnosticate a movable kidney. He says it can only be made by

palpation of the abdomen. The abdomen should be uncovered and the patient lying down. To feel the right kidney, the right hand should be placed on the abdomen, the thumb being on the last rib at the back and fingers in front below the costal margin. The kidney may be felt with slight pressure of the fingers to be down, but, if not, when the patient draws a deep breath, the kidney will slip into the fingers and can be slipped back easily. A common mistake is to palpate the abdomen with the flat of the hand; this simply pushes the kidney in front of the hand. The best way is to get the kidney in between the thumb and fingers, and not to press too heavily. It is necessary, before concluding that the kidney is not movable, to examine the patient sitting or standing. In these two positions the patient should lean forward and try to relax the muscles. In examining the left kidney, the left arm should be placed around the body, the physician standing on the right side of the patient, the fingers being placed under the last rib; the right hand should be placed under the left costal margin. On drawing the breath or on sitting or standing, if the kidney be movable, it will be felt between the fingers and can be made to slide up in a most characteristic way. The left kidney rarely falls to the same degree as the right. The right kidney frequently falls into the iliac fossa and even into the pelvis, but the author has never seen a case where the left fell below the umbilicus. It is remarkable that the left kidney feels much smaller than the right.

On Obscure Hemorrhage from a Single Kidney and its Cure by Nephrotomy. Rovsing (*Brit. Med. Jour.*, Nov., 1898) doubts the existence of so-called "hematuria from a healthy kidney." He claims that the only cases in which the cause could be positively determined are those subjected to an exploratory operation, and of the 12 reported cases of this kind, only 2 are in any way convincing. In all others various pathologic conditions were found, which would account for the bleeding. In none of all these cases was a bacteriologic examination made, thus excluding the possibility of determining whether the cause of bleeding was or was not due to infection. It is now a recognized fact that urinary infection may occur without suppuration. Finally, the supposed "normal" kidneys were possibly not the ones responsible for the hematuria, the seat being either in the pelvis or ureter. As to the cause of the bleeding, the author ascribes it either to torsion of the pedicle with its vessels, causing a venous stasis in the kidney and rupture of small veins, or retention (intermittent acute hydronephrosis). It is also probable that a sudden invasion of the kidney by a great number of microbes may give rise to a passing hematuria without other effects. The author also points out as a cause of hematuria the traumatism produced on the kidneys by tight lacing, thus explaining some apparently mysterious cases. In conclusion, the author emphatically objects to the nosology and treatment of Klemperer, claiming as the only means of treatment and diagnosis an exploratory incision.

On Compensatory Hypertrophy of the Suprarenal Body. Simmonds (*Virchow's Archiv.*, CLIII., S. 138) found, on the autopsy of a man who died from carcinoma of the face, an atrophied left suprarenal, the right

being correspondingly hypertrophied. The atrophy was acquired as a result of tuberculosis, affecting the cervical glands and the left suprarenal only. This led the author to experiment on the lower animals, and he found that extirpation of one suprarenal was invariably followed by a vicarious hypertrophy of the other, thus proving that the suprarenal bodies belong to the paired organs, one of which assumes vicarious hypertrophy in case of atrophy of the other.

The Diagnosis of the Condition of Each Kidney by Inoculation of the Separated Sediments into Guinea-Pigs in Suspected Renal Tuberculosis. Reynolds (*Bul. of Johns Hopkins Hosp.,* Nov., 1898) emphasizes the importance of an early diagnosis of primary renal tuberculosis when it is unilateral. A nephrectomy performed then would save the life of the patient. The diagnosis, however, is exceedingly difficult. The early symptoms of the disease will vary greatly, both in character and in intensity in different cases, and even in the same case at various times. Typically the symptoms are pain of a bearing-down character and usually increased by standing, frequent urination which is urgent, and sometimes hematuria. These conditions, however, are symptomatic also of simple pyelitis, renal calculus and new growth in the pelvis of the kidney. A microscopic examination for tubercle bacilli in the urine may also prove misleading, since they were found wanting by experts when renal tuberculosis actually existed. The tubercle bacilli, if found, should be carefully differentiated from the smegma bacillus before a positive conclusion is reached. The only way of making a positive diagnosis is the injection of a fresh sediment into the peritoneal cavity of a guinea-pig. For the purpose of determining whether one kidney is affected, the urine should be collected separately from each ureter. In the case reported by the author, the urine from the right kidney, when injected into a guinea-pig, produced tuberculosis in the animal. The urine from the left kidney did not. When the right kidney was removed, it was found tuberculous, although it was apparently normal in external appearance, showing that the disease was in its incipiency. The woman recovered.

DERMATOLOGY.

UNDER THE CHARGE OF

P. G. UNNA, M.D.,

Of Hamburg, Germany,

AND

ARTHUR VAN HARLINGEN, M.D.,

Emeritus Professor, Diseases of the Skin, Philadelphia Polyclinic; Consulting Dermatologist to the Children's Hospital, etc.

On the Treatment of Lupus Vulgaris by Local Application of Creosote. Protopopoff (*Medicinskoe Obosrenie,* Nov., 1898), speaking of the lack of means at our command for effectually curing this obstinate affection, points out creosote as a remedial agent, which was first employed with

good effect by Serenin in 1895. Basing his conclusions on the observations of three cases of his own, as well as those made by others, the author claims that local application of creosote, preceded by scarification, will bring about a marked improvement, leaving thin, smooth and even scars. This is of considerable importance whenever the cosmetic effect is to be taken into consideration. The disadvantages of this method are the objectionable odor of creosote and the possibility of poisoning. The author recommends the method whenever the disease is not far advanced. A. R.

Lupus Erythematosus: Its Amenability to Treatment. White (*Jour. of Cut. and Gen.-Urin. Diseases,* Vol. XVI., No. 10, 1898) holds a very hopeless view on the curability of this obstinate affection, claiming that it is in inverse ratio to the length of the list of means recommended for its cure. The author disputes the ground taken by the dermatologists, who consider lupus as tuberculosis of the skin, basing their conclusions on the action of "tuberculins" on lupus erythematosus. "Given a disease of unknown nature, a remedy of untested properties, productive of an unstudied action upon forms of cutaneous tuberculosis, a similar action, it may be, upon the former, *ergo* lupus erythematosus is a form of tuberculosis. Such methods of experimentation and inference under the name of science are hardly less puerile than the same conclusion would be from the fact that tuberculin and tuberculosis both begin with T." As an analogy the author mentions the generally accepted therapeutic test of syphilis by the action of iodid of potash, and here he says that he no longer believes in the trustworthiness of this test, for his experience of the past two or three years has taught him that this drug will clear up areas of psoriasis, which often simulates syphilitic dermatoses. In the treatment of lupus the author employs both internal and external medication. Of the latter he uses only the mild remedies, such as black wash, zinc oxide and sulphur wash, calamine and Boeck's washes, white precipitate ointment, salicylated soap plaster (10 to 20 per cent.), and lactic acid as the subsequent and stimulating remedies. Drugs which have proved especially serviceable are: iod-glycerin (iodin, pot.iod, aa 3i, glycerin 3iv) and emplast. mercuriale. A. R.

Furunculosis: Its Etiology and Treatment. Stoner (*Med. News,* Jan., 1899) does not believe that boils depend upon an internal dyscrasia. They are a purely local affection, due to the invasion of the staphylococcus pyogenes aureus, and sometimes albus or citreus. Of course, disordered metabolism may increase the predisposition by the formation of a locus minoris resistentiae. There is no specific, and the treatment resolves itself into the liberal use of antiseptics, the best of which is a strong solution of bichlorid of mercury, 1 to 500. It should be mopped upon the unbroken skin for some distance about the abscess, if such has already formed. This antiseptic treatment prevents the further infection of the neighboring hair follicles. The application should be made twice a day; the abscess cavity irrigated with a weak bichlorid solution. The poultice is only mentioned to be condemned, as the heat and moisture it produces enhance the vitality and activity of the pyogenic germs, and a greater amount of necrotic tissue

is produced, thus more than counterbalancing the temporary alleviation of the pain. In summarizing, the author repeats that the so-called condition of furunculosis is a misnomer; that it is not a constitutional disease to be treated by internal remedies, but that it is simply the result of local points of infection originating from a parent source; that its treatment should consist in limiting the pus-producing agency within the bounds of its starting-point, and, when this is not practicable, to destroy the pus-cocci by a strong solution of bichlorid of mercury before they are able to start new points of infection; that the so-called abortive treatment has little to commend it except in the very incipiency, and that a strong solution of corrosive sublimate is the agent *par excellence* to be depended upon for this purpose. A. R.

Some New Remedies in Dermatology, Derivations of Pyrogallol, Chrysarobin and Resorcin. Kromayer and Vieth (*Monatsh. f. prakt. Dermat.,* Vol. XXVII., No. 1) have tried the following new chemicals in skin diseases: Lenigallol (pyrogalloltriacetat), eugallol (pyrogallolmonoacetat), saligallol (disalicylat), lenirobin (chrysarobintetraacetat) and eurobin (chrysarobintriacetat). The results obtained were as follows: Lenigallol, insoluble in water, has no effect on sound skin, acts only on diseased areas, and never produces poisoning. It is used in weak dilution (lenigallol 0.5-5.0; ung. zinci oxidi 100.0). It acts rapidly and effectually in acute and subacute eczema, especially in children. Eugallol is of a syrupy consistency, and forms, when diluted with aceton and painted over the skin, a firm and elastic film. It acts very energetically on psoriasis, but it must be used with caution, as it may produce inflammation of the skin. Saligallol, dissolved in 2 parts of aceton or 15 parts of chloroform, forms a very nice protective, and can serve as a vehicle for eugallol, eurobin and other medicaments. Lenirobin and eurobin are much less liable to produce conjunctivitis than chrysarobin, although just as active. A. R.

What are We to Understand by Eczema? Morris (*Jour. Cut. and Gen.-Urin. Dis.,* Vol. XVI., No. 193) says that we know a good deal about eczema, but we are not yet agreed as to what eczema is. He believes, together with Unna, that the disease is due to a parasite, first cultivated and described by Unna under the name of "morococci," because they are often seen clustered together in little masses resembling mulberries. The contagious nature of this affection seems to be established by several reported cases. As in any other infectious disease, predisposing conditions are necessary for its production. There may be various disturbances of the digestive or nervous system. In conclusion, the author answers the question by the following statement: "It is a disease, the most clinical character of which is the infinite variety of lesions by which it displays itself, originating in the action of parasites on the skin, the resistance of which has been enfeebled by pre-existing disease or structural abnormality, or by disordered innervation, sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health."

A Case of Dermatitis Exfoliation Neonatorum. Prissmann (*St. Petersb. Medicin. Wochensh.*, Dec., 1898) reports a sporadic case of this rare affection in a weak, syphilitic infant, 10 days old. The dermatitis appeared at first as intertrigo, the skin becoming red and dry. Here and there sudamina formed, soon followed by exfoliation of the skin. In the course of a week the skin of the entire body, except the hands, became affected. The body looked intensely red, the skin smooth, shiny and dry. There was no fever, although the child appeared to suffer greatly. No pronounced symptoms of syphilis could be discovered, the syphilitic taint being presumed on account of the syphilitic mother. Sublimate baths were given. These were followed by a considerable aggravation of the symptoms. The treatment was then changed to bran baths and dusting of a powder composed of dermatol, oxide of zinc and talc, followed by a salve of boric acid. Improvement set in, and the child completely recovered in 4 weeks. It subsequently died of gastro-intestinal catarrh. A. R.

PEDIATRICS.

UNDER THE CHARGE OF

W SOLTAU FENWICK, M.D., B.S. (Lond.), M.R.C.P.,

Physician to Out-Patients at the Evelina Hospital for Sick Children, etc.,

AND

JOHN MADISON TAYLOR, M.D.,

Professor of Diseases of Children, Philadelphia Polyclinic, etc.,

ASSISTED BY

JAMES HERBERT McKEE, M.D.,

Instructor in Pediatrics, Philadelphia Polyclinic.

The Bacteria of Pneumonia in Children. H. Dürck (*Deutsch. Archiv. für klin. Medicin.*, Band 58, Heft 4 and 5) describes the various forms of bacteria found in forty-one autopsies on children suffering from pneumonia. The *Diplococcus pneumoniae* was most frequently found. There is no special effect, however, produced upon the pneumonic exudate, as a result of this admixture; nor does this enable us to differentiate histologically between lobular or pseudo-lobular varieties. It is only admissible to use the term "broncho-pneumonia" when it is certain that the inflammation has progressed from the terminal bronchi to the peri-bronchial tissues. In thirteen children dying from other causes and with healthy lungs, he found constantly various bacteria, the *Diplococcus pneumoniae* being again most frequent; nor were they due to post-mortem infection. Studies of the lungs in recently-killed animals exhibit the same bacteria; this practically proves that bacteria capable of producing pneumonia are to be found in the lungs of healthy people and only produce the disease in organs which are especially susceptible or traumatically rendered less resisting. He also introduced pure cultures of these bacteria which failed to produce the disease.

The Urine of Healthy Infants and Children. Churchill (*Archiv. of Pediat.*, 1898) makes a study of the urine in 70 normal infants and children, ranging in age from 1 day to 12 years; 48 girls and 22 boys, the results of which are classified as to age and average. The analysis includes 146 specimens. The children were inmates of an orphan asylum and under constant observation of trained nurses. Churchill's results show differences in the amount as recorded by other observers, the average being much less. The specific gravity average is higher and a higher percentage of urea. The amount of urea per kilogram of body weight, while slightly higher than the ratio given for adults, is lower than that given by other observers. Eight cases give over 3 per cent. urea, the highest being 3.7 per cent. Chlorides were found constant at about 11 per cent., up to seven years, after which about 9 per cent. Phosphates were found to be from 8 to 11 per cent. between 3 and 5 years; 5 to 7 per cent. between 6 and 12 years; the adult range being about 8 per cent. One boy showed 16 per cent., the digestion being absolutely normal. The percentage of sulphates was from 1 to 1.2 per cent., the average in adults being .8 of 1 per cent. Neither albumen nor sugar was found in any specimen. The sediment showed nothing in particular; the reaction being all of various grades of acidity. The color in most cases was pale, in the rest, normal. A conclusion drawn from this study is that children with a renal, rheumatic or lithemic heredity, should have the amounts of their urine carefully ascertained, along with the quality of their food and drink; and to institute measures to insure the elimination of a more dilute and less irritating urine.

THERAPEUTICS.

UNDER THE CHARGE OF

A. D. BLACKADER, M.D.,

Montreal, Canada.

Professor of Pharmacology and Therapeutics, McGill University; Physician to the Montreal General Hospital, etc.,

AND

WILLIAM S. NEWCOMET, M.D.,

Registrar of St. Agnes' Hospital, Philadelphia; Assistant in Medical Dispensary, University Hospital; Chief of Dispensary at Rush Hospital, Philadelphia, etc.

Camphorated Tincture of Opium in Cuban Malaria, Mixed Malaria and Typhoid-fever Infection. Thomson (*Med. News*, Vol. XXIII., No. 25) presented the following observations to the County Medical Society of New York: When he took charge of the wards of the Roosevelt Hospital on Sept. 1st, it contained 61 cases of fever contracted at Santiago. The majority had been in the hospital since the 17th of August, and had been sick from 20 to 40 days. All had received large doses of quinin (30 to 60 grs. daily), Warburg's tincture ½ ounce to the dose, and arsenic until it disturbed the digestive system. Thirty-nine cases followed; of these two groups, 63 had fever ranging from 103° to 107°, and 40 per cent. of this

number had chills, with the usual succession of symptoms, but with true intermissions only 10 per cent. The remaining 60 per cent. were irregular and had fever, but no chills. Plasmodium malaria was found in 90 per cent.; commonest forms were crescents; many active, mobile, extra cellular bodies, some free pigment and one flagellate body were found. (He thought more could be found if he had had the time.) The clinical picture was one of emaciation and anemia, which appeared quite independent of enlargement of the liver or spleen; the former was enlarged in only 5 per cent. of the cases, while the latter was so in 50 per cent. The condition of mind was taciturn, apathetic, and indifferent. On this condition the treatment had most effect, the majority of them became bright, with a rapid general improvement; those who were delirious regained mental tone rapidly. Mode of administration was as follows: Quinin and powdered ginger aa. xv gr. twice daily, with ʒss of paregoric and a dose of paregoric later. In 47 per cent. the fever fell within 24 hours, and 21 per cent. within 48 hours. In three cases it failed, but was probably due to complications, while six were mixed typhoids. The Greek and Roman physicians used opium for malaria, and this drug was generally used, up to the time when Peruvian bark was discovered, and, although it fell out of general use at that time, some authors still advocated it.

The Employment of Sodium Sulphate as a Hemostatic. Bouveyron (*Lyon Mèdical,* Vol. LXXXIX., No. 45), in contradiction to an article published recently claiming that sodium sulphate was a new remedy for controlling hemorrhage, cites articles by Sydenham in which he recommends this drug as a preventive of spontaneous hemorrhage in fevers; also a publication in Geneva, 1696, in which it is recommended for epistaxis, etc. Fordyce, of England, in his book, 1784, mentions it in the treatment of hemophilia, as does Löwe, of Germany; Smith, of Pennsylvania, and Otto, of New York, have mentioned its use in their writings; Hay and Coates, of America, Johnson, Hunt and Miller, of England, and several German and French writers have written at length upon it. It may be administered by three methods: (1) In one large dose; (2) in small divided doses; (3) in one large dose followed by smaller doses. In these methods it will be found to be valuable in hemoptysis, epistaxis, metrorrhagia, etc. Independent of its purgative action, it may be given in small doses, or subcutaneously, the latter after severe hemorrhage, as sometimes happens in labor.

The Therapeutic Use of Heroin, a Substitute for Morphine. Strube, of Berlin (*Berl. klin. Woch.,* Nov. 7, 1898), has experimented with this new drug and found it a valuable substitute for morphine and especially valuable in such cases as phthisis where coughing and pain predominate, in the dyspnea of cardiac and renal asthma, and in pain generally. The drug is a substitution product of morphine and acetic acid, is white in color, with a slightly bitter taste, only sparingly soluble in water; the dose is 0.005 grm. Heroin oxalate, however, is soluble, and this may be administered hypodermatically; its action is about the same as that of the drug itself. Dose, 0.005 grm. ($\frac{1}{12}$ gr.); never more than 0.01 grm. ($\frac{1}{8}$ gr.) should be given at

once, and not over 0.025 grm. ($\frac{3}{8}$ gr.) per day. Its action lasts from 2 to 4 hours.

Ichthyol Suppositories in Cases of Chronic Prostatitis. Freundenburg, of Berlin (*Gazette Medicalé Belge,* Vol. II., No. 10), recommends suppositories of ichthyol, .3 grm. to .75 grm., in cocoa butter, to relieve painful defecation, unpleasant sensations in the perineum, dysuria, etc., and for the diminution in the swelling of the prostate gland itself. The relief usually follows quickly, and rarely requires a larger quantity than .6 grm. to each suppository.

Sulphonal Poisoning. Gulland (*Brit. Med. Jour.,* Dec., 1898) read a paper before the Edinburgh Medico-Chirurgical Society in which he narrated a fatal case where the patient had, without the knowledge of his medical adviser, taken 30 grains of sulphonal every night for about six weeks. About a week before his death he developed ataxia of the extremities, lassitude and drowsiness, and then hemato-porphyrinuria, and died somewhat suddenly. The post-mortem examination showed no very marked gross lesions beyond fatty degeneration of the heart and stasis in all the organs, but when these were examined microscopically, the principal change was found to be necrosis of the secreting epithelium of the kidney, and certain degenerations in the liver and suprarenal capsules. The pathology of both acute and chronic poisoning was described, and special stress was laid on the kidney changes which were common to both chronic and acute forms, and which the author believed to have at least as much to do with the fatal issue as the action of the drug as a blood poison. In regard to the treatment of acute poisoning, it was pointed out that it was essential to remove as much as possible of the insoluble drug from the alimentary tract, and also to keep up free diuresis, whilst in the chronic form the free use of alkalies was insisted on. The paper terminated with a discussion of the cases in which sulphonal should not be given, these being especially cases where there was constipation, great prostration, or kidney disease, and with a plea for the more careful and discriminating use of the drug.

Washing Out the Stomach after Anesthesia. Dr. Gunby employs gastric lavage to prevent the nausea and vomiting following the use of general anesthesia. He resorted to it 50 times, and in all the patients there was an almost entire absence of nausea. They were more cheerful, and able to take and assimilate nourishment very soon after the operation. In flushing out the stomach he uses an ordinary stomach tube of a large size. From 1 to 2 quarts of warm water are used, and the washing is continued until the water returns free from bile or mucus. The introduction of the tube is best accomplished before the patient recovers consciousness. In order to prevent the closing of the tube by the patient's teeth, a mouth-gag or a large cork is used.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

W. M. L. COPLIN, M.D.,

Professor of Pathology and Bacteriology in the Jefferson Medical College; Director of the Laboratories of the Jefferson Medical College Hospital; Pathologist to the Philadelphia Hospital; Bacteriologist to the Pennsylvania State Board of Health, etc.,

ASSISTED BY

FREDERICK KALTEYER, M.D.,

Philadelphia.

The Action of Cobra Poison on the Blood: A Contribution to the Study of Passive Immunity. Stephens and Myers (*Jour. Path. and Bact.,* No. 3, 1898). The paper is divided into two parts. Part I. deals with the hemolytic action of cobra poison and the influence upon this hemolytic action of antivenomous serum. The following summary is given: "1. Cobra poison is strongly hemolytic *in vitro*. 2. This action is neutralized by antivenomous serum, and the action of the latter is specific. 3. For certain doses (.1 mgrm.) the measure of this neutralization *in vitro* is a measure of the neutralization *in corpore* for guinea-pigs. 4. The neutralization is chemical, and not cellular or vital." Part II. of the paper deals with "The Influence of Cobra Poison on the Clotting of Blood and the Action of Antivenomous Serum upon this Phenomenon *in Vitro*." The following conclusions are reached: "1. Cobra poison delays or inhibits clotting of blood *in vitro*. 2. This inhibitory action upon clotting of cobra poison is neutralized by antivenomous serum *in vitro*. 3. This action of the antivenomous serum *in vitro* is specific. 4. The antivenomous serum itself, when added to blood, delays clotting. 5. For certain doses (.1 mgrm.), the measure of the neutralization *in vitro*, using clotting as the test reaction, is also the measure of the neutralization *in corpore* for guinea-pigs. 6. The neutralization of the toxin by its antitoxin *in vitro* is certainly not vital or cellular, but must be chemical." The article is followed by a bibliography.

The Condition of the Salivary Glands and Pancreas in Chronic Tuberculosis. Harris (*Jour. Path. and Bact.,* No. 3, 1898) found certain changes in the parotid and submaxillary glands, and, though to a less marked degree, in the pancreas. There is a marked increase in the fibrous tissue in connection with the blood-vessels. This fibrosis follows, to a certain extent, the main ducts, and is also present in the inter-alveolar tissue. The changes begin as accumulations of small nucleated cells in connection with the arteries leading to the lobules. This leads the observer to infer that the change is inflammatory. The pressure of the newly-developed fibrous tissue is believed to induce secondary degeneration and destruction of the alveolar cells.

Experiments to Determine Whether Sewer Air Will Raise the Toxicity of Lowly Virulent Diphtheria Bacilli. Shattock (*Jour. of Path. and Bact.,* No. 3, 1898). Diphtheria bacilli of a low degree of virulence were cultivated in an artificial sewer air. Attempts were made to aspirate air from the sewer, but, by reason of the satisfactory ventilation, such air was not believed to possess a sufficient degree of foulness. In order to be sure that the air was sufficiently impregnated with the sewer effluvia, sewage was confined in iron tanks and an ordinary Wolff bottle was charged with diluted fecal matter. The contaminated air retarded the growth of the bacilli. The observer comes to the following conclusions: "The result of these experiments shows that lowly virulent diphtheria bacilli, when cultivated in broth over which fecal air is passed, do not acquire toxic properties, even though the treatment be prolonged for a period of two months."

The Changes Occurring in the Blood of Dogs after Removal of the Thyroid. Levy (*Jour. Path. and Bact.,* No. 3, 1898) reached conclusions that may be briefly summarized as follows: The anemia which follows thyroidectomy is not constant, though usual. It may appear quickly, within two or three days, or its appearance may be greatly delayed. It is not intense. Reduction of the red corpuscles is about 25 per cent., of the hemoglobin 30 per cent. There is no relation between the intensity of the symptoms and the degree of anemia. There is moderate leucocytosis. The specific gravity of the blood always diminishes. The extent of its diminution is inconstant. The fibrin increases. The author concludes that the blood changes in thyroidectomized animals are inconstant in quantity, time of onset and duration.

Note on the Presence of Iron in the Liver and Spleen in Two Cases of Malaria. Dutton (*Jour. Path. and Bact.,* No. 3, 1898) notes the work of Macallum, Boyce and Herdmann, and gives as his method of procedure the following: "Every care was taken to prevent contamination with iron by the use of pure chemicals, glass needles, distilled water, and chemically clean watch glasses. Sections taken from absolute alcohol were transferred to distilled water for a moment to remove the alcohol; they were then placed in one or other of the following reagents: 1. Potassium ferrocyanide, aqueous solution, 1.5 per cent., for about ten minutes; and then into hydrochloric acid, aqueous solution, 0.5 per cent., for five minutes. Almost immediately on treatment with the acid the Prussian blue color was obvious to the naked eye. 2. Sections were transferred to a watch glass, full of distilled water, in which were placed a few crystals of pure hematoxylin, for from ten to fifteen minutes. 3. Nitric acid, 3 per cent., in absolute alcohol. The sections, after treatment with this reagent for about half an hour, were washed in distilled water, and then placed in one or other of the two former solutions. After treatment, the sections were washed in distilled water, dehydrated in absolute alcohol, cleared in cedar oil, and mounted in Canada balsam." The author gives a fairly elaborate historical account and supplements his article by a plate showing the histo-chemic reactions of iron in the liver.

The Effect of Marchi's Fluid on Nervous Tissue that Has Undergone Post-mortem Change. Batten (*Jour. Path. and Bact.,* No. 3, 1898) states that his research was made with the object of determining "to what extent nervous tissue which had undergone post-mortem change, and had been treated by Marchi's fluid, might give rise to appearances likely to be mistaken for degenerative changes." His conclusions were as follows: "I think that the tests above applied, and the results obtained therefrom, warrant the conclusion that Marchi's fluid will demonstrate degeneration in nervous tissue, even when this cannot be obtained for several hours after death, and may safely be used for that purpose so long as the following points are borne in mind: 1. That there is normally a considerable amount of interstitial fat at the exit of the anterior roots and the entrance of the posterior roots into the cord. 2. That a few scattered black dots almost always exist, not only in sections of the cord, but also of the nerves, and that such are no evidence of degenerative change."

A Case of Deciduoma Malignum. Kelly and Teacher (*Jour. Path. and Bact.,* No. 3, 1898) give a resumé of the clinical history, followed by a report of the post-mortem, which may be abstracted as follows: Lungs contain evident secondary growths. The heart condition indicates fatty degeneration. The aorta is slightly atheromatous. Posterior wall of the uterus is the seat of a large vascular tumor about the size of an orange. The lymphatic glands around the rectum are enlarged, and its neighborhood is involved by secondary growths. There are tumor masses in the vaginal wall. The right Fallopian tube contains a small round nodule. There are tumor masses on either side of the vagina and cervix. The veins passing into the tumor are found distended with tumor tissue. We regret that space will not permit the description of the histology. The following remarks concluded the author's paper: "In conclusion, then, it appears that this tumor, like a number of others which have been described by German and American authors, has originated from the epithelium covering the chorionic villi. Further, it is the opinion of the authors of this report that it has been clearly made out that both layers of the epithelium of the villi are represented in the tumor. On account of the alterations due to pressure in infiltrating the normal tissues, and the changes of a degenerative and necrotic nature which overtake the cell processes, this point cannot be made out in many parts of the growth; but in several parts, which had the characters of actively growing and well-preserved tissues, they believe that they have clearly recognized the two kinds of cells, growing in the same close and intimate relationship to one another as in the normal placenta; thus supporting the opinions so ably expressed by Marchand. In view of its epithelial origin, the manner in which it infiltrates the adjacent structures, and the secondary involvement of the lymphatic glands connected with the primary tumor, the growth appears to have much more affinity with carcinoma than with sarcoma, though the manner in which it spreads by the blood stream directly and at an early period is more characteristic of the latter class of growths. In view, however, of the peculiar circumstances of its period of occurrence, they are inclined to agree with Marchand, that it should rather be regarded as a

tumor *sui generis*. On this point judgment may be suspended till more is known about such tumors and about the chorionic epithelium."

Laboratory Notes. By Richard Muir (Edinburgh). (*Jour. Path. and Bact.*, No. 3, 1898.) A Simple Method of Restoring the "Spiking" of the Bacillus Anthracis in Gelatine Stab Cultures.—After noting the loss of this phenomenon, in conclusion the author states that it may be restored "by simply making a culture of the old non-spiking organism on a freshly-prepared blood-agar tube and incubating it for twenty-four hours at 37° C. If subcultivations be made from the blood-agar culture by stabs in 10 per cent. gelatine peptone medium, and incubated for two days at 20° C., it will be found that the organism has recovered its powers of spiking as completely as if it had been taken directly from anthrax blood."

A Modification of Pitfield's Method for Staining Flagella.—Coverglasses cleaned by Van Ermengem's method are spread in the usual manner and allowed to dry in the air:

(*a*) *The Mordant.*

Tannic acid, 10 per cent. watery solution (filter).....10 c.c.
Corrosive sublimate, saturated watery solution..... 5 "
Alum, saturated watery solution..... 5 "
Ziehl-Neelsen's carbol-fuchsine stain..... 5 "

Mix thoroughly, and put in test tubes which are then centrifugalized; or, if a centrifuge is not available, the mixture may simply be allowed to stand over night. A thick deposit will be found at the bottom of the tubes or vessel, and the clear-colored fluid above it should be removed with a pipette and transferred to a clean bottle. This mordant will keep good for one or two weeks.

(*b*) *The Stain.*

Alum, saturated watery solution (filter).....10 c.c.
Gentian-violet, saturated alcoholic solution..... 2 "

The stain will keep for two or three days. This stain can be used in the mordant, in place of the carbol-fuchsine stain. To stain, "pour on as much of the mordant (*a*) as the coverglass will hold, heat gently over a flame till the steam begins to rise, allow to steam for about one minute, and wash well in a gentle stream of running water for about two minutes. Then dry carefully over a flame, and when perfectly dry pour on some of the stain (*b*). Proceed as before, steaming gently over a flame for about one minute, washing well in running water for one or two minutes. If black-stained preparations are preferred, treat with Gram's iodine fixing solution for one minute, drying over a flame, and finally mounting in Canada balsam."

The Gonococcus in the Purulent Secretions of the Genital Organs of Prostitutes. Kopytowsky (*La Gynecologie*, 1898) examined the purulent discharge of 300 patients. In 6% of the cases he found gonococci in the pus from the urethra; in 28% in the glands of Bartholin; in 9% in pus from the cervical canal. Immediately after menstruation the number of gonococci in the cervical canal is increased, and occasionally they

may be found at this time when at other times they are not demonstrable. The author did not find the gonococci a single time in the vaginal pus, although other bacteria were abundantly present. The foregoing leads the author to believe that in the treatment of gonorrhea in the female, more attention should be paid to the destruction of the gonococcus in the urethra, neck of the uterus and glands of Bartholin.

The Conditions Favoring Exflagellation of the Malaria Parasite. Wilson (*Jour. Trop. Med.,* Nov., 1898) refers to Ross's article (*Brit. Med. Jour.,* Jan. 30, 1897) calling attention to the gain made by exposing the blood to air, thereby favoring the development of flagellate forms of the malaria parasite. In recording a case he gives details which may be abstracted as follows: A mount made in the usual way, with the ring of vaseline, after 15 minutes showed 17 fields with 15 crescents and 4 round forms. Another slide, after 20 minutes, showed 16 fields with 13 crescents, and a similar slide after 40 minutes showed 17 fields containing 12 crescents and 7 spheres, no flagellate forms. In experiments 2 and 3, a drop of blood was exposed to the air from ½ minute to 2 minutes before being placed on the slide. In these examinations 73 fields gave 21 crescents, 8 ovals, 50 spheres and 4 flagellate forms. This appears to demonstrate that the development of flagella was furthered by the exposure of the blood to the air. In order to further satisfy himself, the author pricked the finger through vaseline and permitted the drop of blood to remain for one hour under the thin film and then examined it. In this experiment he was able to demonstrate only crescents.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

S. E. SOLLY, M.D., M.R.C.S.,

Colorado Springs, Colo.,

AND

GUY HINSDALE, M.D.,

Philadelphia,

Member of the American Climatological Association; Fellow of the American Neurological Association, etc.

The Effect of Asphalt and Wooden Pavements on the Atmosphere. Polak (*Annales de l'Institut d'Hygiène,* Brussells, 1898) has made chemical and bacteriological examinations of various stone, wood and asphalt pavements at Warsaw. The wooden pavements were of blocks of pine impregnated with copper sulphate. The defilement of the wooden pavement, as shown by chemical methods, was greater at the sides than in the middle of the street. Not the least interesting of Dr. Polak's observations were those in which he attempted to estimate the comparative pollution of the atmosphere by effluvia from wooden and other pavements. He claims

for his method of doing so that it is simple, easy, and, to a certain extent, exact. The writer's contention is that the results show that asphalt is more wholesome as a pavement than wood. Wooden pavement gives, he considers, absolute protection from contamination to the soil and to the subsoil water, but it gives rise to far greater atmospheric pollution than asphalt (*Brit. Med. Jour.,* Vol. II., No. 652).

Climate of the Egyptian Soudan. Felkin (*Brit. Med. Jour.,* Dec., 1898) said in the course of a paper read before the British Balneological and Climatological Society that, roughly speaking, the ninth degree of north latitude divided the country into two parts. To the north were deserts, rocks, an Arab population, a high mean annual temperature (over 85° F.), a dry atmosphere, and slight rainfall (under 5 inches north of Dongola, under 10 inches north of the Sobat). Khartoum was unhealthy, owing to its situation. South of the ninth degree north the country was very fertile; it had a high mean temperature of about 75° F.; the range of temperature was slight (about 10° F.), and the humidity was over 70%. This area was inhabited by negroes. Dr. Felkin referred to the blocks which occurred in the Nile owing to floating vegetation; he explained the cause, and showed how they could be prevented. He mentioned the area where Anglo-Saxons might be expected to thrive when once a method of rapid transport had been secured. He concluded by referring to the prevalent diseases — malaria, dysentery, diarrhea, guinea-worm, etc. He said that it was noteworthy that malaria and phthisis did not occur together in Central Africa, and he mentioned some interesting results which he had obtained with tuberculin in malaria.

Cancer in Relation to the Dwelling. Symons (*Lancet,* Nov., 1898) read a paper under the above title before the Society of Medical Officers of Health. He said that he turned his attention to this subject in the hope that the study of the vital statistics of Bath, a city notorious for its high mortality from cancer, and the population of which was exceptionally constituted, might throw some light on certain aspects of the etiology of cancer. For forty years the population of the borough had been stationary, amounting to about 52,000, of whom two-thirds were females. The proportion of persons over sixty-five years of age was 76, as against 45 in England and Wales, and of children under five years of age 89, instead of 123, per 1,000 living; while that of persons living on their own means was 101, as against 36, Hastings only among towns in the southern counties having a like proportion. At the same time cancer had shown a steady increase until the deaths were 50% higher than they should be after correction for age and sex. Dr. E. N. Nason, Dr. T. W. Blake, and Dr. Lloyd Jones had endeavored to establish a relation between the conditions of the habitations of a people and the prevalence of cancer, Dr. Nason maintaining its preference for low-lying, damp dwellings, as Mr. Haviland had for places liable to floods; but the high death-rate of Shrewsbury could not be so explained, since but a small part of the town was affected by the inundations. The city of Bath, situated in a deep valley traversed by a sluggish river, on a dense surface

soil overlying lias and oolite, with ground-springs and hard water, and surrounded by steep, in some places precipitous, hills, from 300 ft. to 500 ft. in height, presented every variety of site. Some local practitioners believed in the existence of a "cancer zone," but he could find nothing in the distribution of the cases to support this opinion, though there were some peculiarities, as that of a street in which 13 deaths had occurred in ten years on one side and only one on the other. Neither the elevation nor the aspect nor the class of house seemed to have any constant relation to the incidence of the disease.

SURGERY.

UNDER THE CHARGE OF

JOHN A. WYETH, M.D.,

Professor of General Surgery in, and President of, the Faculty of the New York Polyclinic Medical School and Hospital,

AND

CHARLES L. LEONARD, A.M., M.D.,

Skiagrapher to the University Hospital; Surgeon to the Southern Dispensary, and Associate of the Pepper Laboratory of Clinical Medicine.

The Laborde Method of Resuscitation in Connection with Anesthesia. Herzog (*Cent. für Chir.,* 1898), by his experimental work, has taken great pains to prove that the Laborde method has no value in resuscitating patients who have been pushed so far under an anesthetic as to cease breathing. Laborde has frequently stated and proved that his method of resuscitating by the rhythmical traction of the tongue is due to reflex stimulation, and has never claimed that it would resuscitate when the reflexes are abolished. The folly of proving that it will not act after the reflexes have been destroyed and respiratory stimuli paralyzed by an anesthetic is self-evident. C. L. L.

A New Operation for Stone. Nichols, in a recent number of the *Columbus Med. Jour.,* reports a new technic for opening the bladder in suprapubic lithotomy that does away entirely with rectal and intra-vesical distension. After the suprapubic incision has been made through the skin, a sterilized catheter, having preferably a long curve, is introduced into the bladder, and its point carried well up behind the pubes till the bladder wall is made to protrude in the abdominal wound. A ligature is now carried through, which serves as a retractor and is later used to anchor the bladder. An opening is made in the bladder wall below this stitch and the fingers introduced. An assistant passes two fingers into the rectum and lifts the posterior bladder wall. Thus a practical bimanual palpation of the entire bladder wall can be made, or a stone can be readily found and removed by the forceps. The wound in the bladder is not closed by stitches, but the bladder is anchored high up by fastening the anchoring stitch in the upper

angle of the abdominal wound. The abdominal wound is closed by superficial interrupted sutures. A catheter is tied in for a few hours, to be followed by regular catheterization to prevent distension. In the case in which the author has employed this method, good results were obtained in spite of many difficulties and an unruly patient.

Chloroform in India. A. Neve (*Brit. Med. Jour.,* Nov. 5, 1898), after collecting valuable statistics from the larger hospital centers in India, gives the following conclusions: 1. There is considerable evidence that in India the mortality from chloroform does not exceed 1 in 8,000 cases, and in some of the larger institutions it is less than 1 in 20,000. 2. This safety does not appear to be due to any special constitutional condition of Indian races, and but little to their habits. 3. It is probably due entirely to the warm atmosphere, which favors the rapid action of the drug and its rapid elimination. 4. To obtain similar safety in other countries, it would be advisable to assimilate the conditions of administration. (*a*) To operate in well-ventilated rooms, in a temperature not below 70° F. (*b*) To observe the cardinal rules so long taught (but often not observed) in Edinburgh, namely, to produce anesthesia gradually; to dilute the chloroform with plenty of air; to watch the respiration closely; to test the corneal reflex, and observe the pupils and color of the patient; to keep the respiratory channels free from all obstruction, and to keep the patient in a recumbent position; never to "pile on" chloroform in cases of struggling, but to give more fresh air.

End-to-end Anastomosis of the Intestine. Johnson (*Am. Pract. and News,* Nov., 1898) describes a method which he has devised for facilitating end-to-end anastomosis. It consists in passing into the ends of the intestine a cylinder of vegetable corresponding to the lumen of the intestine, followed by the employment of the ordinary Lembert suture. His claim, that it facilitates suture by those who are not fully conversant with the technic of the ordinary end-to-end anastomosis is true, but the same is true of the intestinal anastomosis forceps that have been lately devised, while the latter have the advantage of leaving the lumen of the gut entirely free. Both methods, of course, facilitate the operation, even in the most skilful hands, but neither of these methods marks such an advance in intestinal surgery as did the Murphy button. Advance in this direction must be looked for in improvements in the design and the overcoming of the objectionable features that have been found in the mechanical devices, which produce a rapid anastomosis without the necessity of sutures.

Treatment of Sarcoma by Coley's Fluid. Battle (*Lancet,* Nov. 19, 1898) exhibited before the Medical Society of London a case of sarcoma in which a marked effect had been produced by Coley's fluid. Half-minim doses were injected, and a total of 24 minims was used in three months' treatment. The growth had diminished till it could not be detected. Microscopical examination had shown it to be composed of spindle cells,

with some large cells. There had, however, been no absolute demonstration of its malignant nature.

Successful Removal of Stones of Unusual Size from Both Kidneys. Brook (*Brit. Med. Jour.,* Nov. 5, 1898) reports a remarkable case of successful removal of renal calculi from both kidneys. The stones were of unusual size and were removed at separate operations. The fact that the second and larger stone was not recognized at the time of the first operation is an excellent illustration of the quiescent character of some cases of calculous nephritis, and shows how difficult it is to make a diagnosis by ordinary means in the great majority of cases. The larger stone weighed ℥iv, the smaller ℥iii. The kidney first operated upon contained the smaller stone, and was the one that secreted the most of the urine. The remains of the left kidney probably secreted the majority of the pus that was found in the urine. Although the larger stone had destroyed so much of the kidney substance, it did not produce any marked symptoms until its weight dragged the kidney from its moorings. In both stones the subjective symptoms were remarkable by their absence.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

D. BRADEN KYLE, M.D.,

Clinical Professor of Laryngology and Rhinology in the Jefferson Medical College, Philadelphia; Consulting Laryngologist, Rhinologist and Otologist to St. Agnes' Hospital, etc.,

ASSISTED BY

W. H. KING, M.D.,

Assistant Otologist, Pennsylvania Hospital, Out-patient Department, and Associate in the Throat and Nose Department of the Jefferson Medical College Hospital.

The Local Use of the Aqueous Extract of the Suprarenal Glands of the Sheep in the Nose and Throat. Henry L. Swain (*New York Med. Jour.,* Dec. 24, 1898) has used the aqueous extract which is prepared from the dried saccharated glands. A solution is made from this by adding ten to twenty grains to half a drachm of cold water, and having thoroughly stirred the powder in, the whole is filtered. The result is a reddish-brown fluid. It is unstable and will not keep longer than three days, the formation of a deposit being a sign of decomposition. A small amount of alcohol added to the solution seems to render it more permanent. It should not be used with other drugs in mixture, as it works best alone. When sprayed on moist mucous membranes, it gives a sensation of slight warmth and stimulation, and produces immediate blanching by virtue of the long recognized power it has of causing the peripheral vasomotor apparatus to contract the small blood vessels. The parts touched by it immediately blanch to a most livid white, then very gradually contract to a considerable degree, but only over the area directly moistened. Frequent use does not seem to promote tolerance of the drug, and there is no loss of tone of the vessels, as is the case when cocain is employed. No untoward effect seems

to be observed, either locally or constitutionally. There is no danger of a local tolerance of the tissue or a general habit of the patient being acquired. It can be employed in conjunction with cocain to prolong and fortify the action of the latter drug. The experience of the author is summed up as follows: "First. We have in the aqueous extract of suprarenal glands a powerful local vasoconstrictor agent and a contractor of erectile tissue, which it is safe to use in very considerable amounts without any dangerous or deleterious effects locally, or to the general constitution of the individual. Second. These local effects can be reproduced in the same individual apparently any number of times without entailing any vicious habit, either to the tissue or to the individual. Third. The use of the extract seems rather to heighten the effects which may be expected from any given drug which may be locally used after it. Fourth. In acute congestions it has its widest application and greatest opportunity for good, but also in certain chronic conditions of the hay-fever type, where edematous tissue seems prone to develop, it can be relied upon as one of the most helpful adjuvants which we have at command. The only difficulty seems to be in producing it in quantities and in preventing decomposition on standing, which objection will probably be easily overcome by laboratory experiment."

Applications of Suprarenal Liquid, one per cent., in the Treatment of Hyperemic Laryngitis. Sargnon (*Lyon Med.*, No. 40, 1898) has used, in the service of Dr. Garel, applications of suprarenal liquid 1% in acute laryngitis and six other cases. The same medicament, employed in ocular lesions, had shown on the vessels of the cornea a vaso-constrictor power that M. Sargnon had sought to avail himself of in the laryngeal mucosa. Close observation of the six cases reported by M. Sargnon is not, unhappily, of a nature to strengthen our conviction, for if the suprarenal liquid does cause contraction of the vessels, this action is too fleeting to be utilized with profit. On a conjunctival inflammation, at first Bates, then Dor and Barraud, obtained a constriction of the little vessels, which permits cocain to produce its anesthetic effect. Mullen tried this remedy on the nasal mucosa, and praises it. According to his idea, it produces a great vaso-motor constriction, increases the anesthetic effect of cocain, prolongs its action and arrests hemorrhage in the incised tissue. It is true that this author always followed the employment of suprarenal extract by an application of 5% cocain. We have taken occasion to experiment on our own pituitary membrane as to the vaso-constrictor and anesthetizing effect of the suprarenal extract. There was no appreciable result. We neither experienced contraction of the mucous membrane nor was there any loss of sensation. The remedy had for its sole effect the production of a sensation of smarting which was very disagreeable; therefore, until proven to the contrary, we remain skeptical on this point (*Rev. Heb. de Lar. de Otol., et de Rhinol.*, Nov. 26, 1898).

Submucous Treatment of Hypertrophic Rhinitis (Die submucose Behandlung der Rhinitis Hypertrophicans). Hamm (*Monats. f. Ohrenheilk*, No. 9, 1898), instead of employing the galvano-cautery on the submucosa, as proposed by Bloebaum, which would, according to the

author, prove sufficient, in certain instances, to destroy the mucous membrane, injects a 10% solution of chlorid of zinc beneath the membrane. These injections are made, after cocainization of the mucosa, by means of a Pravaz syringe with a needle point, and 50 centigrams are injected between the membrane and the bone. The pain attendant upon this operation is trifling, especially if an interval of three minutes is allowed to lapse between the submucous injection of the cocain and the zinc solution. An excellent result is obtained, a cure in the affected turbinate usually resulting in a week after the injection. The proceeding is analogous to that proposed by Lannelogue for the radical treatment of hernia, and to the treatment applied by Landerer to small cystic tumors (*Rev. Heb. de Lar. de Otol., et de Rhinol.*, Dec. 3, 1898).

OPHTHALMOLOGY.

UNDER THE CHARGE OF

WALTER L. PYLE, A.M., M.D.,

Assistant Surgeon to Wills Eye Hospital, Philadelphia.

Intramuscular Injections of the Biniodid of Mercury in Atrophy of the Optic Nerve. Reiss (*New Orleans Med. and Surg. Jour.*, Nov., 1898) describes the gradual evolution of the extraoral method of administering mercurial salts by the Italian school, chiefly by Rampoldi, until its adoption by Abadie, Panas and other French ophthalmologists. At first hypodermic, subconjunctival and intravenous injections were used. But to avoid pain and inflammation, soluble salts introduced into the muscles offered the best means. Inspired by his promising observations in Panas's clinic in Paris, Reiss was led to try the biniodid in atrophic conditions of the optic nerve. By its continued use he has obtained considerable benefit, even in non-specific cases. The solution is the same as that used by Panas at the Hotel Dieu. The injections are given daily, in series of forty, with about two-week intervals of rest. The biniodid is dissolved in olive oil which has been washed in alcohol and then sterilized. The process of preparation consists in taking 1,000 cubic centimeters of olive oil, to which is added 300 cubic centimeters of alcohol. This is mixed and left together for four or five days, being careful to agitate the mixture from time to time. The alcohol is then decanted. The oil is then free from oleic acid. After this it is brought to a temperature of 110° or 115° C. for ten minutes, and then allowed to stand until it is reduced to 60°. The biniodid of mercury is at this time dissolved in the oil. The solution is filtered on sterilized cotton and put in sterilized bottles. Every 100 c.c. of the oil must dissolve 0.40 centigrams of the biniodid of mercury. It must be kept in colored

bottles to prevent its being altered in its composition by rays of light. By reason of the great muscular structure of the buttocks and the absence of the risk of coming across any large vessels, this region has been chosen as the seat of the injection. All antiseptic precautions must naturally be taken, and for that reason a platinum needle is used, which can be brought to a red heat over an alcohol flame before its introduction. It is also necessary to wash the part where the needle is to be introduced with a 1-4,000 bichlorid solution immediately before the injection is given. Four milligrams is the dose given at each injection, and this proportion is found in 1 c.c., which is the quantity injected.

Remarks on the Surgical Treatment of Cataract based on 750 Cases of Extraction. Neve (*Indian Med. Rec.,* Oct. 1, 1898) analyzes a series of 750 cases of cataract extraction performed by his brother and himself at the Kashmir Mission Hospital. The general results were: Successful, 677; failed, 36; left the hospital, result unknown, 14. In the last 200 cases the percentage of failure had been reduced from 6% to 3½%, and in this connection he makes the following summary of his observations: (1) Careful selection of cases is the most important factor of success. (2) Hardly second to it is the employment of scrupulous antiseptic technique. (3) A large percentage of eyes, the conjunctival sacs of which are in a doubtful condition, can, nevertheless, be operated upon with success after careful preliminary antiseptic and astringent treatment for days or weeks. (4) Under such conditions, however, naturally, the percentage of failure rises sharply. (5) But the measure of success attained amply justifies the additional risk. (6) Previous iritis has a particularly prejudicial effect on the results. (7) The omission of iridectomy, while producing excellent results in the majority of cases, does undoubtedly increase the risk of prolapse of the iris and also of occlusion. On the other hand, the danger of vitreous loss is diminished. (8) The attempt to extract the lens in its capsule is so frequently attended with vitreous loss, that it should be restricted to cases where the lens nucleus is small. (9) As an all-round operation, Von Graefe's linear extraction with iridectomy is the most suitable, and, in the long run, gives the best average results.

The Treatment of Granular Conjunctivitis by Salicylic Acid. Moty (*Gazette des Hopitaux,* Nov. 22, 1898) recommends the application of salicylic acid in alcoholic solution in cases of granular conjunctivitis. He uses a solution containing salicylic acid 3 grams, alcohol at 60° C. 30 grams. The lids are everted and held by the left hand, and the solution is applied to the granules by means of a mop of cotton on an applicator, with the right hand. A wet antiseptic tampon is squeezed over the lids before and after the application. The two eyes are treated successively. The applications are used every day, every two days, or every week, according to the progress and severity of the case. Salicylic acid acts much like silver nitrate, but is well tolerated in corneal disease. Moty has had good success with this treatment for over four years. Of course, the usual accessory treatment is necessary.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

J. D. THOMAS, M.D.,

Professor Genito-Urinary Diseases, Western Pennsylvania Medical College (Medical Department Western University, Pittsburg); Genito-Urinary Surgeon to the South Side Hospital; Ex-Vice-President American Medical Association, etc.

AND

ELLWOOD R. KIRBY, M.D.,

Clinical Professor of Genito-Urinary Diseases, Medico-Chirurgical College, Philadelphia.

---

1. Tuberculosis of the Bladder, Etiology and Pathology. 2. Symptoms and Treatment of Tuberculosis of the Bladder. Coplin and Horwitz (*Jour. of Cutan. and Gen.-Urin. Dis.*, Dec., 1898) report a case of vesical tuberculosis, giving their views on this affection. (1) Coplin ascribes the apparent increase in the frequency of vesical tuberculosis to the greater skill in recognizing the condition. The case is that of a man, 23 years old, white, tailor. He died of what was supposed to be pneumonia. Had had bladder trouble for some years, which was diagnosed in Europe as stone in that viscus. The post-mortem revealed, among other pathologic conditions, old adhesions of both pleurae, miliary tuberculosis of both lungs and enlarged spleen. The bladder was found contracted and contained 20 c.c. of pus-like fluid. Just above the opening of the ureters there was a round ulcer, $2\frac{3}{4}$ inches in diameter, with elevated and thickened edges. In the upper part of the posterior wall another small ulcer was found. Both, on further microscopic examination, proved to be typical tubercular ulcerations. Considering the etiology, the author believes that a large proportion of cases are induced by the urine carrying the bacillus from the kidney or ureter, the bladder becoming involved by mural implantation. Next in order of frequency is the direct extension from the ureter. Less commonly the infection is derived from tuberculosis of the prostate, rectum or other contiguous organs. There is also a possibility of the bladder becoming involved in tuberculosis of the seminal vesicles, but this is rare. The least common of all is infection from the blood stream. Age and family history play the same part in diagnosis as in other forms of tuberculosis. (2) In discussing the symptoms, Horwitz says that their severity will depend upon the stage and development of the tuberculosis and the co-existence of secondary infection by pus-cocci. The onset, as a rule, is insidious and likely to be mistaken for a slight affection. As the disease advances, the symptoms strongly resemble those of calculus. At first there is a frequent and urgent desire to urinate; then pain manifests itself, increasing in severity as the disease advances. It is felt, in the male, about the middle of the penis; this differentiates it from calculus, where the pain is felt at the meatus. Inability to completely empty the bladder is one of the late symptoms. Hematuria, which is very profuse when ulceration exists, is frequently an early symptom. In the last stages of the disease the walls of the bladder become greatly thickened and contracted, making the capacity of

the viscus not over one or two ounces. When infection of the bladder is derived from contiguous tissues, the symptoms will point to the organs primarily involved. The tubercle bacilli in the urine are not found with sufficient frequency or constancy to form a reliable guide in diagnosis. Their absence, therefore, is not conclusive. In suspected cases, where an ordinary examination has failed to reveal the presence of the tubercle bacilli, an experimental inoculation should be made on a rabbit. The reaction of the urine will be acid if the mucous membrane alone is inflamed, but becomes alkaline as the disease becomes interstitial. As to treatment, it is very unsatisfactory, and, considering the invariably grave prognosis, it can only be palliative. Dietetic, climatic and hygienic measures play an important part also in this form of tuberculosis. Of drugs, the author uses only those which are anti-tubercular and urinary antiseptics. Guaiacol and creosote are the most valuable. Of the principal urinary antiseptics, he found of most service salol, methylin blue, in 2 gr. doses, and urotropin, in 5 gr. doses, four times daily. Pain should be relieved by suppositories of opium and belladonna. When permanent drainage becomes necessary, a suprapubic cystotomy is the only means of relief. A. R.

On the Treatment of Nocturnal Pollution and Premature Ejaculations. Popper (*D. Med. Wochenschr.*, No. 43, 1898) found that whether the nocturnal emissions be produced by the swelling and hyperemia of the caput gallinaginis, causing peripheral irritation, which during sleep stimulates the ejaculatory centers, or the premature ejaculations be due to swelling and hyperesthesia of the verumontanum, electricity will be beneficial in both instances. He applies to the caput gallinaginis a galvanic current of 1-2 milliamperes; 5-6 sittings, with intervals of 5-6 days, are all that are necessary. A. R.

The Surgical Treatment for Some Forms of Disease of the Prostate Gland and Seminal Apparatus. Benninghoff (*Penn. Med. Jour.*, Jan., 1899) summarizes his article as follows: Enlargement of the prostate gland is generally due to gonorrheal disease of seminal ducts, vasa deferentia, or epididymis, on one side or both; any part of the seminal vesicles or vasa deferentia being diseased, the epididymis always being so. Disease of the epididymis, one or both, produces sympathetic enlargement of the prostate gland, which recovers upon removal of the diseased epididymis. Disease of the epididymis seems to be active in continuing disease of the seminal tract, at any part, and removal of the epididymis has a favorable effect in curing the same. Sclerotic epididymis, like an indurated and hardened post-cystic ovary, has no active or passive function, except as an organ of *irritation*, and its removal, while arresting the irritation, does not change the copulative functions. When disease of the epididymis is restricted to one side, that epididymis alone should be removed; when to both sides, both epididymi should be removed. The testicles should be spared, at least until after trying the above measures and failing to cure. LAB. J. L.

Electrolysis and Cataphoric Medication. Overall (*Jour. of Amer. Med. Ass.*, Jan. 21, 1899) says that impotency is almost invariably the result

of chronic prostatitis in men past 40 years of age (when it is not due to inebriety or organic cerebro-spinal disease). The chief causes of chronic prostatitis are strictures, urethritis, cystitis, rectal ulceration and rough treatment of strictures by the forcible introduction of sounds. The hypertrophy of the prostate of old age should not be confounded with the swollen prostate of chronic prostatitis. The treatment recommended by Overall consists in electrolysis and cataphoric medication. The cataphoric electrodes may be introduced into the urethra or rectum. Rectal cataphoresis is preferred when the urethra is tender. A number of cases of chronic prostatitis, cystitis, and urethritis, and several of impotency and spermatorrhea, are reported in which cataphoric treatment brought about a cure. The solution employed was generally one of boric acid. LAB. J. L.

GYNECOLOGY.

UNDER THE CHARGE OF

EDWARD E. MONTGOMERY, M.D.,

Professor of Gynecology, Jefferson Medical College; Gynecologist to Jefferson and St. Joseph's Hospitals, etc.,

AND

WILMER KRUSEN, M.D.,

Instructor in Gynecology, Jefferson Medical College; Assistant Gynecologist, St. Joseph's Hospital; Gynecologist, Charity Hospital of Philadelphia, and Chief of Dispensary for Diseases of Women, St. Joseph's Hospital.

Congres periodique de Gynecologie, d'Obstetrique, et de Pediatrie. (1) Platon, of Marseilles, in reporting the Congress, mentions a case of pregnancy with a double uterus occurring in the practice of M. Queirel. The woman had a double uterus with an incomplete partition of the vagina. The first pregnancy, in 1893, continued to full term, and the labor, after slow dilatation, was terminated by the application of the balloon of Champetier, and the painful delivery of a dead child, there being a breech presentation. In 1897 a second pregnancy was followed by a less painful delivery, but resulting, as before, in the death of the infant. In case of pregnancy, these genital malformations almost always bring vicious presentations, generally that of the shoulder. Labor is always painful, and the woman is sometimes exposed to such terrible complications as the rupture of the uterus. Schroeder attempted the ablation of the uterine partition, after which the patient was able to be delivered at term and without difficulty. (2) Platon also refers to the recent extension of organo-therapy. Since the advent of the Sequardian method, Professor Villeneuve has employed extracts of testicular juice. This directs attention to the attempts made at the Hotel Dieu, of Marseilles, to use injections of the testicular fluid of the guinea-pig for cancerous affections. In all these observations, these subcutaneous injections were followed by considerable augmentation of strength and an appreciable increase of appetite. The revivifying action recalls that

of the injection of ovarian extract for chloro-anemia advocated by Dr. Spielman. Would not these extracts of ovary have a still more energetic action upon uterine cancers? (*Gaz. des Hopitaux,* 1898.)

Un Procede de Vagino-fixation. M. Richelot (*Gaz. Med. de Paris,* 1898) recognizes all the accidents during pregnancy and at term following vagino-fixation, but says that they are the result of bad technique. In order to avoid them, it is necessary to place the sutures exclusively upon the anterior surface of the uterus and below the tubular orifices. As during pregnancy, the uterus develops especially at the fundus, therefore it is essential that the fundus should always be left free.

Ectopic Gestation Associated with Primary Tuberculosis of the Fallopian Tube. Shober (*Amer. Jour. Obstetrics,* Dec., 1898) reports a case of ectopic gestation associated with primary tuberculosis of the Fallopian tube. On microscopic examination the most striking feature of the tubal cross section was the almost complete obliteration of the epithelial lining. In the majority of sections, not only was the lumen obscured, but the tubal mucosa entirely replaced and the walls invaded for a considerable part of their thickness by closely-packed, round cells. Areas of mucosa resembling miliary abscesses were numerous. The primary tuberculosis of the tubes had evidently existed for many years. The left tube being sufficiently patulous to permit the passage of spermatozoa throughout its length, the ovum was probably impregnated immediately upon the rupture of the Graafian follicle, and, not being able to proceed further by reason of the condition of the tube, implanted itself upon the surface of the infundibulum or upon a fimbria, and went on to develop, until it finally ruptured, at about the end of the fifth week.

Contra-indications to Operation on Uterine Fibroids. Chandelux, of Lyons (*Le Semaine Medicale,* Dec. 7, 1898), thinks that the complete effacement of the cervix, in case of a voluminous fibroma of that organ, ought to lead more frequently to the suspicion of a subperitoneal development of a tumor creating grave operative dangers. This sign constitutes a contra-indication to surgical intervention. The condition of the os uteri can equally indicate the advisability of an operation, when one has determined by auscultation the presence of large veins on the surface of the uterine fibroma, having attained a greater or less volume. In these conditions, it is known we cannot operate without danger, unless the tumor can be raised, forming a pedicle, when hemorrhage can be arrested by simple constriction of this pedicle. But it has been shown that we can rightly count upon this rapid formation of a pedicle only in those cases in which the cervix has preserved a portion of its normal characteristics. When, on the contrary, the cervix is notably deformed or effaced, there is grave danger that during the operation such hemorrhages may occur as will place the life of the patient in immediate peril.

Application of Heat to Uterine Cancer. Westermark, of Stockholm (*Centralblatt für Gynakologie,* Dec. 10, 1898), reports favorable results from the use of constant heat in cases of inoperable ulcerating cancer

of the uterus, thus further extending the method of Welander, who had advocated its use in ulcers. He uses a specially devised apparatus having a spiral silver tube, through which hot water constantly circulates, this spiral being introduced into the vagina. He has used the method in seven cases, obtaining good results in all of them. The odor and bleeding soon disappeared and the patients made rapid recoveries. In two cases, which he reports in detail, the heat was maintained constantly for forty-eight hours, at a temperature ranging from 42° to 58.5° C. He had good results also in using a temperature of 42° to 44° C.

Central Laceration of the Perineum. Voituriez (*Jour. des Sciences Medicales de Lille,* Dec. 3, 1898) remarks that central ruptures of the perineum during delivery are very rarely observed in practice. Delcroix, in 1891, could collect only 75 well-authenticated cases; but Voituriez himself, in the service of M. Duret, recently saw a case of complete central perineal rupture in a patient 18 years of age. He defines the central rupture of the perineum as beginning in the center and radiating in different ways, but always leaving the anus and vulva intact. The most common agent of this rupture is the head of the infant pushed by forcible contractions of the uterus against the perineal band; nevertheless, in rare cases, it is the coming arm, or a foot in breech presentation, which issues by the break made in the perineum. Voituriez distinguishes three kinds of central rupture: (*a*) In the first case, the skin of the perineum only breaks, the obstetrician perceiving this in time, rapidly terminates the labor either by the forceps, or by the aid of episiotomy. (*b*) In the second case, all the thickness of the perineum is torn; but the head and body of the child are delivered by the vulva. In a case of this kind, one can observe the coming of an arm or a foot by the perineal opening. (*c*) In the third case, the central rupture of the perineum is said to be complete; the head and body of the infant are delivered by the abnormal orifice, also the placenta. From an anatomo-pathologic point of view, the characteristics of a complete central rupture are: (1) The integrity of the vulvar fourchette; (2) the persistence of the anal sphincter; (3) the tearing, by bursting, of the posterior vaginal wall to an extent sufficient to give issue to the fetal head; (4) the rupture of the muscular floor of the perineum; (5) of the skin of the perineum. The causes of the central rupture are of three classes: those arising from some unusual form of the bony pelvis, or those pertaining either to the perineum, or to the uterine muscle itself. The treatment of central rupture of the perineum is preventive and curative. When one finds in the last stages of labor, in connection with a large, lax and greatly-bulging perineum, that the vulva is pressed up very high and forward, and the examination of the pelvis indicates danger of a central rupture, it can be avoided by certain means. First, the rectal maneuver, which consists in introducing one or two fingers into the rectum and pushing the head forward to aid in passing the vulva. Second, episiotomy, which consists in incising the vulva and sectioning the hymen in case of narrowness and rigidity. The posterior median incision seems preferable in this case. Third, the application of forceps, which permits a rapid and sure delivery per vias naturales.

The Conservative Surgery of the Ovary. Martin (*Med. Press and Circular,* Nov. 16, 1898) advocates more conservative surgery of the ovary. The physiological value of the ovaries may be best realized by noting the results of complete extirpation of both glands. (*a*) The woman becomes absolutely sterile. (*b*) Menstruation ceases in about 95% of the cases. (*c*) The uterus, and, to a less extent, the vagina and vulva, undergo a process of atrophy. (*d*) The nervous symptoms of the menopause appear abruptly and violently, viz., heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system. (*e*) In a majority of cases there is a diminution or total abolition of the sexual instincts. (*f*) The patient has a tendency to obesity. Now, if one ovary, or even only a portion of one ovary, be left behind, none of these symptoms appear. There is physiologically no difference between a woman with half an ovary and a woman with two ovaries; but there is a great difference between a woman with half an ovary and a woman with none. It is remarkable how small a fragment of ovarian tissue is necessary to preserve the full influence of the gland on the body.

Vaginal Section. Taylor (*Pacific Med. Jour.,* Dec., 1898) has been convinced, by his recent experience, of the superior merits, in the majority of cases, of vaginal section as a better and more conservative procedure than abdominal incision, for the relief and cure of diseased conditions of the pelvic organs. After preparation of the vagina, the patient is placed in the lithotomy position on a table with shoulder braces which can be converted into the Trendelenberg position. Long blade retractors are employed. After the vaginal incision has been made, pads of sterilized gauze with long tapes attached are placed above the tubes and uterus, making a complete septum between these organs and the intestines and omentum, which keeps the intestines up and out of the way. All adhesions to the bowel are broken up and the bowel well protected before operating upon the tubes or ovaries. The ureters are well guarded by keeping the bladder pressed forward and cutting close to the uterus. The posterior vaginal rent can be closed by two or three sutures, or, if drainage is desired, the Mikulicz method may be employed. The major points of preference for this method are: It gives less shock to the patient. It is not so dangerous an operation. There is not the risk of hernia. It insures better drainage and more rapid recovery. It permits unabsorbable ligatures to be tied and left exposed in the vagina till they are ready to be taken out, a few days later. And, finally, Taylor believes that the nervous phenomena are much lessened after vaginal section, when the whole or part of the ovaries or uterus can be permitted to remain in the pelvic cavity.

The Subjection of Women Students in Russia. The Woman's Medical College, of St. Petersburg, Russia, receives no student without a written permit from parents or husband expressing their full willingness that she may study.

OBSTETRICS.

UNDER THE CHARGE OF

RICHARD C. NORRIS, M.D.,

Lecturer on Clinical and Operative Obstetrics in the University of Pennsylvania; Physician-in-Charge, Preston Retreat; Gynecologist to the Methodist Hospital; Visiting Obstetrician to the Philadelphia Hospital,

AND

DOWLING BENJAMIN, M.D.,

Camden, N. J.,

Obstetrician and Gynecologist to the Cooper Hospital,

ASSISTED BY

WILLIAM F. CRAIG, M.D.,

Philadelphia.

A Resume of One Thousand Cases of Labor. Hammond (*Amer. Jour. of Obst.*, Dec., 1898) gives the result of his observation in this large number of cases. Some of his deductions are: Sex, 107 males to 100 females; L. O. A. position, 80% of cases; average duration, 12½ hours; most births, between 2 and 5 in the morning. The forceps were applied in 105 cases, and 43 were still-births.

Ectopic Pregnancy. Pond (*Vermont Med. Rec.*, Dec. 24, 1898) discusses the subject of extra uterine pregnancy and also reports some cases. The treatment recommended is immediate operation as soon as the diagnosis is made. Early operations reduce the mortality to six or eight per cent. (Kelly). If the child is viable, operation should be done at once; if nearly so, operation may be delayed until the child is viable.

The Use and Abuse of Midwifery Forceps. Murray (*Georgia Jour. of Med. and Surg.*, Nov., 1898) discusses the value of the forceps and the harm that can ensue when they are improperly applied, or at the improper time. The dangers are those usually given: (1) Mother's parts may be bruised, lacerated or otherwise injured; (2) the too sudden emptying of the uterus may be followed by imperfect retraction, and, consequently, hemorrhage; (3) the fetal head may be unduly compressed, lacerated or otherwise damaged. Unless there be special indications for the forceps application, as absence of pains or weakness of the fetal heart, time should not be a primary determining factor.

Is Eclampsia a Microbic Affection? Bar (*L'Obstetrique*, Nov., 1898) fully discusses the work of investigators who have endeavored to show that eclampsia is bacterial or microbic in origin. As early as 1883, Delore, at the Congrès de Blois, pointed out the symptoms of eclampsia in comparison with those of diseases due to germs, and suggested the probability of a like origin for eclampsia. Though much has been done, the results are in

no way conclusive. Examination of blood and urine shows germs that do not occur in pregnant women free from eclampsia. The results thus far simply further our belief that its origin is microbic.

Multiple Pregnancy. Crockett (*The Med. and Surg. Bulletin,* Nashville, Dec., 1898), in discussing multiple pregnancy, brings out some interesting facts. Twin pregnancy in Great Britain occurs once in every 90 to 110 cases. Two well-authenticated cases of six children at a birth are on record in this country. Multiple pregnancy is commonest in first pregnancy, in old rather than in young primiperae. It occurs most often in families that produce imbeciles, idiots, victims of club-foot and spina bifida.

A Case of Bicornate Uterus Mistaken for Ectopic Gestation. Gibson (*The Canadian Jour. of Med. and Sur.*, 1898) reports a case of bicornate uterus in which, from the presence of a dead fetus, the symptoms were somewhat similar to those of extra-uterine pregnancy. Exploratory incision disclosed an impregnated left horn of the uterus. The wound was closed, and a few days later the patient aborted. Recovery followed.

Saline Transfusion in Puerperal Eclampsia. Neale (*Maryl. Med. Jour.,* Dec., 1898) emphasizes the value of the normal salt solution in cases of eclampsia. Whatever may be its cause, we do know that these cases improve under this important measure in the treatment. It dilutes the poison that probably circulates in the blood, it stimulates the heart by increasing the bulk of the blood. Transfusion into the loose cellular tissue under the mammary gland is the preferable method. As a rule, each breast will hold a litre if injected slowly, but the amount should be regulated to suit the case. In many cases one hypodermaclysis will not suffice. A second and a third transfusion on successive occasions, and in smaller amount, will often prevent a further recurrence.

A Secret Society of Physicians. A secret fraternal order of physicians has been started in Cleveland, O., under the title of the "Palmar Arch." The object is said to be the advancement of physicians in professional work through exchange of ideas. The intention is to make of it a national organization and confer charters upon similar organizations in other cities.

A Rare Case of Precocious Menstruation. Hofacker reports the case of a rhachitic girl, 9 years old, who began to walk when 20 months old. At the end of the first year a bloody discharge appeared from the vagina at intervals of 4 weeks, lasting from 3 to 5 days. At present the breasts are well developed, axilla and mons veneris covered with hair, labia majora and minora larger than normal, and the pelvis much broader than usual in a child.

INTERNATIONAL MEDICAL MAGAZINE.

A Monthly Journal of Medical and Surgical Science.

FEBRUARY, 1899.

Edited by BOARDMAN REED, M.D.

PUBLISHED MONTHLY BY E. B. TREAT & CO., 241–243 WEST 23D STREET, NEW YORK.

The Family Physician of the Past.

There are men who seem really to yearn for a return of the good old days when every physician could easily acquire, within two courses of lectures, about all there was to be learned in the science and art of medicine — when every patient who could not be cured by bleeding, purging, blistering, or emesis, was considered as foreordained to die, and when a pair of saddlebags could carry all the medicines and instruments required, with room to spare. Every physician in that hallowed era had to be his own apothecary, except for the assistance of the boy who presided over the mortar and pestle; and the itemized bill, which we reproduce on another page, shows how munificently he was rewarded for both drugs and professional services. This same curious old bill, which is probably about a century old, is a significant commentary, also, on the position of the practitioner of the olden times. It is difficult to believe that the medical adviser who was obliged to add to his professional function the duties of a petty shop-keeper, possessed a higher social position than the average physician of this latter end of the nineteenth century. Moreover, the fashion that required a physician to itemize such charges as one penny for a purging powder, sixpence for a worm plaster, and two shillings and sixpence for each "journey to Cargo," is one the revival of which would not enhance the dignity and standing of the profession.

An article entitled "The Passing of the Family Physician," which appeared in the January number of a New York medical publication, reflects a feeling of protest prevalent in certain quarters against the present tendency to specialism in medicine. The writer pays a flattering tribute to the high mental and moral qualities and commanding influence, which he believes to have peculiarly characterized the practitioner of an earlier day, intimating that we "ne'er shall see his like again." He refers to Ian MacLaren's Weelium MacLure in a way that would give the impression that such doctors were the product exclusively of a past age. We must take issue with the assumption that there are no more broad-minded, noble, self-sacrificing physicians of the type so powerfully limned by the novelist in his "Beside the Bonny Briar Bush." We believe that there are any number of Weelium

MacLures quietly and unostentatiously doing their good work in the United States to-day; that the average country doctor is now as unselfish and devoted to duty as in any previous age, and far more skilful and influential than his predecessors ever were. Indeed, despite the retrogressive, pessimistic spirit which occasionally shows itself in opposition to the gigantic advances which medical science is making, there is no room for doubt that the best educated and most thoroughly equipped physicians of the present, even in the smaller towns and country places, command as much greater respect than those of fifty years ago, as their knowledge of medicine is larger and more accurate, and as their percentage of cures is higher.

The practice of medicine is simply following all the other activities of the age in the process of differentiation or specialization. To protest against this result of an inevitable evolution would seem to be as foolish as to cry out against the progress which has done away with the hand-loom and the stage coach.

It is right, of course, and ought to be the invariable rule, that every physician who aspires to be a specialist shall have a number of years' experience both in hospital and private general practice before entering a special field. It is better, too, that his final choice of such narrower field should be determined by the tastes and aptitudes developed while in his general work. But it will be useless to attempt to stem the tide of medical progress or turn it backward. Were it possible to deprive our art of the results of the thorough scientific work recently accomplished along the various special lines, the effect would be to abandon to death or prolonged suffering a multitude of patients who are now being cured.

The Family Physician of the Future.

Contemporaneously with the outcropping of professional atavism referred to above, there have appeared two notable communications which call attention to some of the things that the special workers in the medical field have lately done for the good of mankind. Chittenden, in an article which appeared in the New York *Medical Journal* of December 31st, presents a splendid catalogue of the more practical and useful contributions that chemistry has been making to clinical medicine. Referring to these, he says: "I am aware that the physician in general practice is considered too busy a man to find opportunity for elaborate chemical examination of the urine, to say nothing of the feces, sputum, gastric contents, etc., but I question very much if the time has not arrived when the physician must make use of this important aid in diagnosis." Chittenden then quotes as follows from Simon: "Diagnosis is now the password in medical science. It is inconceivable that a physician can rationally diagnose and treat diseases of the stomach, intestines, kidneys, liver, etc., without laboratory facilities."

T. Clifford Allbutt, in his most scholarly and philosophic address, en-

titled "Medicine in the Nineteenth Century," which was published in the *Bulletin of the Johns Hopkins Hospital* for December, discusses various phases of modern medical progress and refers to the outcry which has been raised against specialism. He wisely points out that while "in advancing civilization the applications of thought, as well as those of labor, must be divided and sub-divided," yet "happily evolution will be found still to consist not in differentiation only, but also in integration." In other words, there must be men whose duty it shall be to correlate the parts which hereafter will make up the mighty whole of medicine.

It has been sarcastically objected that, if the present tendency goes on, the duties of the family physician will ultimately become limited to diagnosticating the diseases of his patients and then distributing them (the patients, not the diseases) around among the appropriate specialists; but the contrary is far more likely to result from the forces now in operation. General practitioners more frequently excel in therapeutics than in the niceties of diagnosis. It is precisely in the latter art that the most extraordinary progress has recently been made, and it will be henceforth impossible for any man, no matter how versatile or enduring, to become familiar with all the apparatus and skilled manipulations, as well as the chemical processes and microscopic methods that would be required to enable him to diagnosticate accurately all the possible diseases of every part of the human body. But, given the diagnosis, the task of conducting the treatment should, as a rule, be within the power of all intelligent physicians.

Important as are the recent advances in therapeutics, they can all be learned without great difficulty, and family physicians, who desire to hold their patients, will ultimately be obliged to perfect themselves in so many of them, at least, as do not involve much special training of the eye or hand.

Thus, it is far more likely that therapeutics will eventually become the specialty of the general practitioner, and by that time there will necessarily have developed out of the present transition state of the medical art general consultants of such great learning and breadth of view that they will be able to grasp the full significance of reports from adepts in any special branch, and to advise successfully as to the proper line of treatment in complicated cases of whatever kind.

Is there a Pretuberculous Stage of Phthisis?

Dr. H. P. Loomis has recently written an elaborate paper on "The Pretuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and Some Aids to its Diagnosis." An abstract of it appears in another part of the present number of the INTERNATIONAL. A careful perusal of the paper shows that the writer has had in mind two different conditions — one the early or incipient stage of phthisis, which may or may not be capable of demonstration by the usual physical signs, and the other an adynamic state or condition of diminished vital resistance

which may be due to congenital narrowness or other malformation of the chest, chronic gastro-intestinal disease, typhoid fever, malaria, pertussis, sedentary occupations pursued in crowded, unventilated rooms, or any one of numerous other depressing causes. In the first named condition, tuberculosis already exists, whether clearly recognizable or not by auscultation and percussion; therefore, it cannot correctly be called pretuberculous. In the other it does not necessarily exist and may never be contracted, though undoubtedly the lowered health and diminished vital resistance invite the bacillary infection and fully justify the rejection of such persons as recruits for the army or navy. Strictly speaking, then, there is no such thing as a "pretuberculous stage" of pulmonary tuberculosis. Phthisis doubtless often exists in an early stage with such slight involvement of the lung that we cannot demonstrate it, and yet whenever the symptoms observed, viz.: anemia, dyspepsia, loss of weight, etc., are really a result of tuberculous infection, the case is clearly one of phthisis in the tuberculous, not *pre*-tuberculous, stage. On the other hand, persons having merely a height which is excessive in proportion to their weight, diminished respiratory capacity or chloro-anemia from other causes than tuberculosis, cannot with any accuracy be described as in a pretuberculous stage of phthisis. They are naturally more in danger of becoming infected with the bacilli than others, but every experienced physician has known scores of such persons to live out their expectancy without ever becoming victims of consumption. Dr. Loomis has done the profession a service in calling attention so prominently to the various forms or phases of lowered nutrition that often pave the way for tuberculosis, as well as to the signs by which they can be recognized; but we must insist upon things being called by their right names.

German Soluble Digitalin.

There are numerous unanswerable reasons for administering the alkaloids or active principles of remedies whenever practicable in preference to the crude drugs themselves. The proportion of the efficient ingredients in the latter is varying and uncertain, and the therapeutic results to be obtained are correspondingly unreliable. Moreover, most vegetable drugs contain more than one active principle, and not infrequently they contain several with actions more or less opposed to each other.

Dr. Henry Beates, of Philadelphia, has for many years been an able and earnest advocate of the more precise medication obtainable by administering active principles instead of the heterogeneous combinations offered by nature in the drugs themselves or in the familiar fluid extracts, tinctures or infusions of the same. Especially has he insisted upon the greater efficacy of the German soluble digitalin (mainly digitalein) as compared with the usual preparations of digitalis. In a paper entitled "The Continuous Use of Digitalin in the Vasomotor and Cardiac Lesions of Senility," recently

published by him in the *Therapeutic Gazette,* Dr. Beates teaches that the earlier, and, to some extent, later atheromatous changes in the arteries and smaller vessels may be almost certainly remedied by a bold and persistent use of this derivative of the foxglove. He carries the dosage in bad cases to one-half grain several times a day, and has never seen any except the happiest results from the practice. Several other physicians also have reported well of this method. This is a most important innovation, and it is to be hoped that tests of the German digitalin, in comparison with the infusion of digitalis and other cardiac tonics, may be made on a large scale in hospitals where numerous chronic heart cases are congregated. We cannot learn too much about the remedies with which disease is to be cured or mitigated. But if the German digitalin proves to have the unique virtues recently ascribed to it, why not have it sold and known under some distinctive name, and thus avoid confusion? We should be pleased to hear from Dr. Beates on this subject.

A Suggestion Anticipated.

When we threw out the suggestion editorially that the way to help protect the always gullible public against the unspeakable folly of Christian Science and kindred humbugs was to have the most capable medical writers show them up in publications designed for popular reading, we were all unconscious of the fact that precisely that very thing was even then being done. We are just in receipt of a little brochure published by McClelland & Co., of Cincinnati, embodying an address delivered by Dr. Charles A. L. Reed, by invitation, before the Northwestern Ohio Medical Association, December 8, 1898. It has been published in pamphlet form for general distribution, in accordance with a resolution of the Society. The title of the address is "Christian Science: A Sociological Study," and it does not leave this latest mystic cult a single leg to stand on — physical, moral, scientific or legal. It is simply unanswerable.

Static Electricity for Constipation.

Professor Doumer, President of the French Society of Electro-Therapy, presented a paper on the treatment of constipation by static electricity before that Society at a recent meeting. The brief published summary of the proceedings leads us to hope that the full paper, when it appears, will contain definite and detailed directions for the successful application of the method. Dr. Margaret Cleaves, of New York, has also earnestly championed this form of treatment, and claimed it to be almost uniformly effective in her hands; and yet, most other practitioners who have essayed the method have been less fortunate, and chronic constipation continues to be as rebellious as ever — the bane of our modern civilization and the often unsuspected cause of thousands of nervous break-downs.

BOOK-REVIEWS.

THREE THOUSAND QUESTIONS ON MEDICAL SUBJECTS, ARRANGED FOR SELF-EXAMINATION. With the Proper References to Standard Works in Which the Correct Replies Will Be Found. Second Edition, enlarged. Philadelphia, P. Blakiston's Son & Co.

This handy little book will be found useful by students preparing for examination, as well as by quiz-masters in selecting their questions.

AN ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY AND ALLIED SCIENCES. By George M. Gould, A.M., M.D. Fourth edition. Philadelphia, P. Blakiston's Son & Co. 1898.

Gould's Dictionary has been one of the greatest hits among recent medical books. It has attained an extraordinary popularity — and that, too, in competition with half a dozen excellent works by scholarly and painstaking lexicographers. One of its chief merits is its copiousness, including, as it does, in addition to numerous encyclopedic features to be mentioned later, all the words, old and new, properly employed in the manifold branches that go to make up modern medical science. It gives evidence of an extraordinary amount of erudition in its author, besides a vast deal of diligent research by himself and his able co-workers, and, in spite of many rather startling changes in spelling, not all of which have yet gained wide recognition, it is likely to become and remain for a long time the standard authority. It is really a medical library in itself. Under "arteries" is found an extensive table comprising the name, origin, distribution and branches of every artery in the body. Preceding this is a scheme representing the entire arterial system. There is a similar elaborate treatment of the nerves and muscles, as well as the bones, so that the practitioner who has become rusty in his anatomy (and how many are there of us who have not?) can brush up satisfactorily with the help of his Gould's Dictionary, even though he has no work on anatomy at hand. So with materia medica and therapeutics. Under each standard drug is to be found a brief account of its principal actions, as well as the doses of each of its official preparations. Even so new a preparation as thyroid extract is well described in its appropriate place, besides a further discussion of it with other similarly-acting remedies under the head of organotherapy. The table of poisons, with their effects, antidotes, etc., is admirably full and satisfactory. But the most extraordinary result of patient, painstaking work to be found in the volume is the "Table of Tests." It contains over eight hundred tests which are more or less generally employed by physicians and laboratory specialists. The name of each is given, with its use, the reagents comprising it (often with the exact formula), the reaction to be expected, the mode of application, and remarks. For the surgeon there is an "Eponymic Table of Operations and Methods in Surgery," which covers 30 pages of the finest print and summarizes remarkably well the immense field covered by it. The same fulness and convenience of arrangement is shown in the treatment of every branch of medicine, both practical and theoretical. In short, the work is a one-volume medical encyclopedia. It is well printed and very strongly

bound, as a large octavo volume of 1,633 pages needs to be, especially when it is sure to be referred to many times daily.

A Treatise on "Unripe" Cataract. By William A. McKeown, M.D., M.Ch., of Belfast. Illustrated by nine plates containing 60 original drawings. London, H. K. Lewis. 1898.

This book is based upon observations of about 700 cases of various kinds, extending over a period of fourteen years. The text of the book is found in the statement, in the first few pages, that the real barrier to successful cataract extraction is the difficulty experienced in removing any loose cortex. For this reason so-called "unripe" cataracts have been avoided, and patients have been put off until their cataracts have exhibited sufficient evidences of solidity to indicate ease of extraction. Dr. McKeown righteously protests against the policy of compelling persons afflicted with slowly-maturing cataract to grope their way in partial blindness, abstaining from business as well as from many worldly pleasures, until their cataracts are ripe. He also strikes a clarion note when he says that the surgery of cataract, in contradistinction to surgery generally, has been for some time practically non-progressive, and that this lack of progress is in no way attributable to the previous attainment of perfection.

Dr. McKeown reviews the various means of cataract-extraction and removal of loose cortex. He shows the unreliability of such methods as removal of the lens in its capsule, artificial softening of the cortex by preliminary needle operation Förster's method of artificial maturation, etc., and proposes instead the method which he has devised and so successfully used in 700 cases — *intra-capsular injection and irrigation.* His apparatus consists of a flat-bottomed Florence flask, stopped by a piece of cork-wood, through which are passed two glass tubes, not touching, by half the depth of the flask, the surface of the irrigating fluid (a solution of sodium chlorid in distilled water, 4 grs. to the oz.). To one glass tube is attached a rubber tube, on the end of which may be fixed, according to indications, a hollow needle for puncturing the capsule and irrigating the cortex, or a blunt tube for irrigating the anterior chamber. To the other glass tube is attached a rubber bulb to promote the flow of the liquid. This apparatus is sterilized by boiling the fluid in the flask, which gives off moving steam, and thus sterilizes the rest of the apparatus.

The order of the operation is as follows: 1. Corneal section. 2. Small iridectomy. 3. Introduction of a fine needle into the lens and free intra-capsular irrigation. 4. Introduction of cystitome. 5. Evacuation of lens by massage of cornea, corneal pressure and counter-pressure. 6. Removal of any remaining cortical substance by irrigation of the anterior chamber. The intra-capsular injection partially solidifies and furthers easy removal of a soft cortex almost immediately and without danger from increased tension. If there is any difficulty in entering the needle, it should be withdrawn, with the assurance that, even though the cortex is clear, it is sclerosed, and easy extraction may be expected.

In addition to the presentation of his method, Dr. McKeown reviews the whole subject of cataract. He proposes the best classification and description of the various forms of cataract that we have seen, in that it is objective rather than inferential. His description of antisepsis and the technic of extraction is a strong section of the book. There is a vigorous arraignment of the dangerous old-fashioned methods still in vogue. He cites, in example, the fact that the dirty and dangerous practice of using the mouth with Teale's suction

instrument is still, in these days of antisepticism (to which the modern success of cataract-extraction is largely due), referred to without warning in ordinary text-books.

It must be remembered that Dr. McKeown is not exploiting a theory. His logic is sound, and every page is forceful. There is abundance of confirmative statistics and extensive tabular annotation. It pleases us to read such a magnificent monograph on cataract. Through the monograph only can the science be advanced. The fame-bringing text-book seldom records any marked advancement. In the great number of cases it is merely a matter of editing and collation, and it is stale and useless in a few years.

We leave this excellent work with a few final words of comment. We suggest that the author somewhat modify his picture of the modern operator's fear of "immature cataract." Few American surgeons allow their patients any considerable period of disabling blindness while awaiting maturation. They operate, and by use of irrigation of the anterior chamber with one of the several instruments in the American market (our preference is Lippincott's), they obtain fairly good results. However, we acknowledge the decided advance in intra-capsular irrigation. We also suggest the elimination of such oversights as Llandolt (for Landolt), on several pages, Forster (for Förster), and chloresterin (for cholesterin) on page 36. W. L. P.

The Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine. By William Osler, M.D. Third edition, entirely revised and enlarged. New York, D. Appleton & Co. Pp. 1,181.

This popular text-book has been thoroughly revised and wholly recast with a new font of type and a somewhat enlarged page, which allows increase of material without material increase of the size of the book. Dr. Osler still maintains eleven sections, but changes the titles somewhat. The section-headings now read:

1. Specific Infectious Diseases. 2. Diseases Due to Animal Parasite. 3. Intoxication and Sunstroke. 4. Constitutional Diseases. 5. Diseases of Digestive System. 6. Diseases of the Respiratory System. 7. Diseases of the Circulatory System. 8. Diseases of the Blood and Ductless Glands. 9. Diseases of the Kidneys. 10. Diseases of the Nervous System. 11. Diseases of the Muscles.

The following articles have been rewritten or are new, viz.: Vaccination, Beri-beri, The Bubonic Plague, Cerebro-Spinal Fever, Pneumonia, Malta, Gonorrheal Infection, Cancer of the Stomach, The Gastric Neuroses, Enteroptosis, The Cirrhoses of the Liver, Jaundice, The Diseases of the Bile Passages, Diseases of the Pancreas, Diseases of the Thymus Gland, Diseases of the Spleen, Lymphatism, Addison's Disease, Encephalitis, Neurasthenia, Erythromelalgia, and many shorter articles, as Hypertrophic Stenosis of the Pylorus, Ether Pneumonia, Anesthesia, Paralysis, Pneumaturia, Albumosuria, etc. Into the sections on Typhoid Fever, Tuberculosis, Rheumatic Fever, Diabetes, Gout, Parasitic Diseases, Diseases of the Blood, Heart, Lungs and Kidneys, much new matter has been incorporated. The section on diseases of the nervous system has been rearranged, and an attempt has been made to group the diseases in accordance with the modern conceptions of the anatomy and functions of the parts.

With its new features and improved material, the book is again in the front rank of text-books, and will likely enjoy the same popularity as it did in 1892 and 1893.

MEDICAL NEWS AND MISCELLANY.

A Physician's Bill in Ye Olden Time.

T——— H——— to J——— H———, *Dr.*

1768			
Jan.	7	To a worm plaster	£0-0-6
"		To oil of olives	0-0-8
"		To a bag and pipe	0-0-6
"	10	To Reu	0-0-1
Oct.	16	To a box of ointment	0-0-2
"	29	To two purging powders	0-0-4
"		To a pot of ointment	0-0-6
Nov.	21	To a dose of salts and manna	0-0-3
1769			
Jan.	17	To two purging powders	0-0-6
"	30	To box of mercurial ointment	0-0-2
Feb.	18	To liniment	0-0-10
April	1	To a purging powder	0-0-1
"	3	To three purging powders	0-0-10
May	27	To four purging powders	0-0-19
July	7	To manna & cream tartar	0-0-8
"		To a journey to Cargo	0-2-6
"	9	To ditto	0-2-6
"	11	To two purging powders	0-0-3
"	15	To journey to Cargo	0-2-6
"	18	To ditto	0-2-6
"	20	To ditto	0-2-6
Oct.	15	To a rhubarb powder, etc	0-1-0
"		To a mixture	0-1-10
"		To a glyster	0-1-10
"		To a bag and pipe	0-0-6
"		To a journey to Longburgh	0-4-0
"	17	To a plaster	0-0-6
			£1-8-11
1769			
		Brought over	£1-8-11
Dec.	21	To a box ointment	0-0-1
"		To a Peruvian decoction	0-2-3
"		To distilled vinigar	0-0-6
"		To mithediate	0-0-6
"		To a journey to Longburgh	0-4-0
"	23	To a journey to Longburgh	0-4-0
			£1-18-3
To medicine and attendance to Longburgh			£1- 1-8
To " " to Cargo			0-16-7
			£1-18-3

Received payment in full,
J——— H———.